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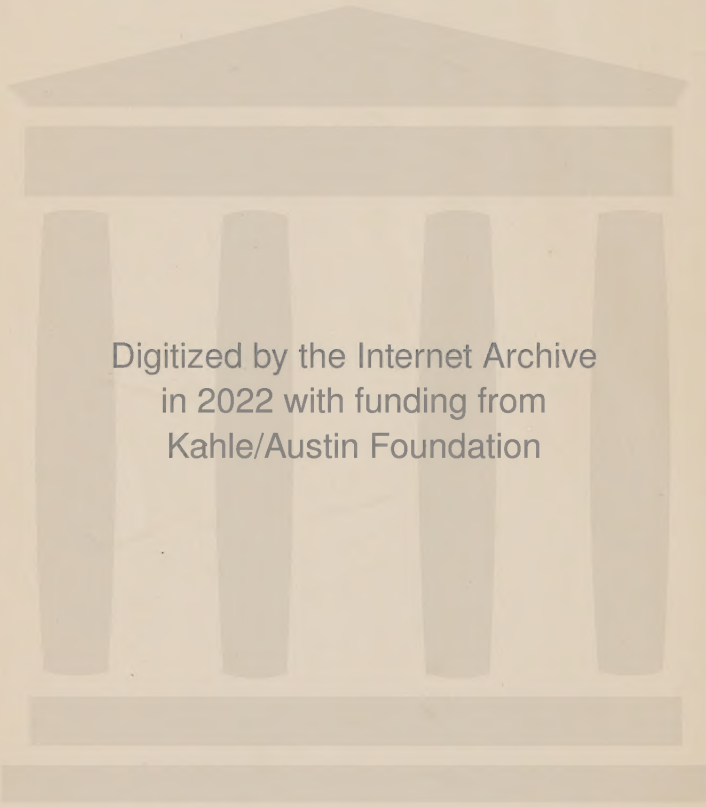
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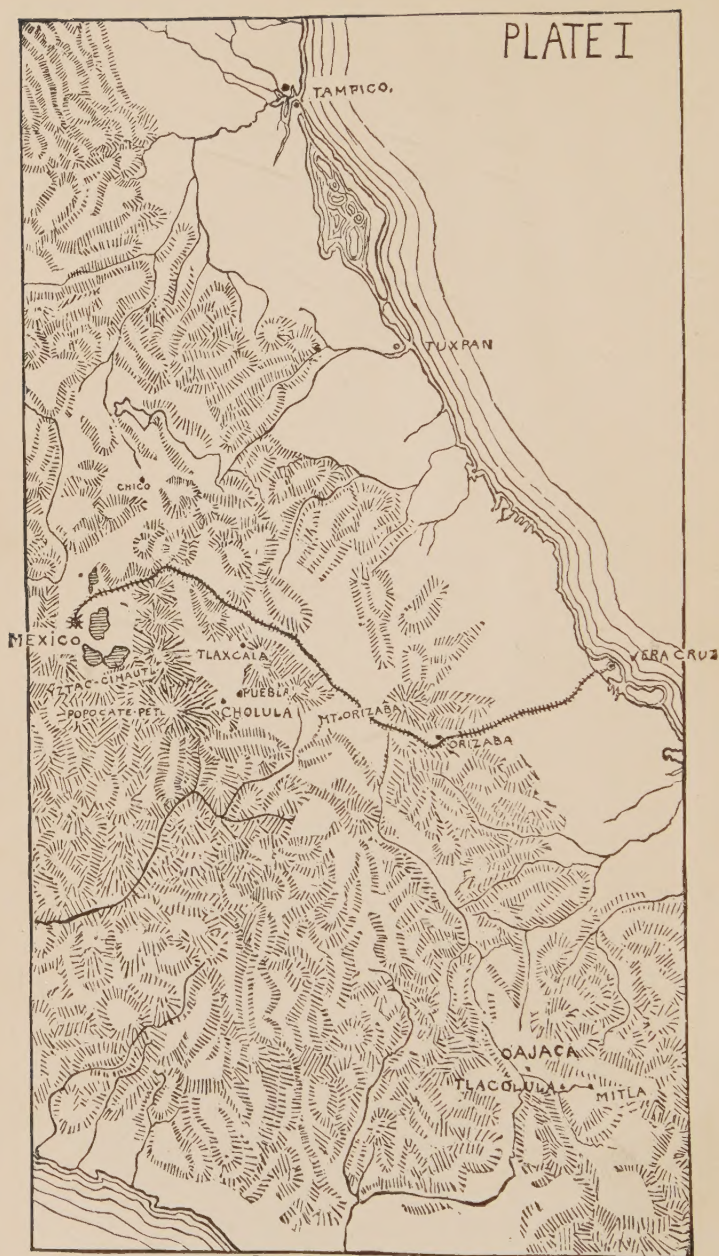
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SKETCH MAP OF CENTRAL MEXICO.

Papers of the Archaeological Institute of America.
AMERICAN SERIES.

II.

REPORT
OF
AN ARCHÆOLOGICAL TOUR IN MEXICO,
IN 1881.

BY
A. F. BANDELIER.



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*Such of the Illustrations as are not reproductions of photographs
are from drawings by the author.*

AN
ARCHÆOLOGICAL RECONNOISSANCE
INTO
MEXICO,
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PART I.

FROM TAMPICO TO THE CITY OF MEXICO.

TO the eye of an uninterested traveller the gulf-coast of Mexico, between the mouth of the Rio Grande del Norte and the bar of the Rio Pánuco near the city of Tampico, presents but few attractive features. In contrast to the lovely blue or green sea, often calm and placid, an arid sandy shore lines the western horizon; it is low and barren, and only when the Rio Pánuco is approached do mountains begin to rise in the distance. The most easterly spur of the Sierra Madre Oriental,¹ after forming successively the limits between the States of Puebla and Hidalgo and the State of Vera Cruz, crosses the southeastern corner of San Luis, and enters the State of Tamaulipas almost due east of Tampico. The eastern slope of this mountain chain, proceeding northwestward, still further recedes from the coast; and it is this broad interval, between mountain and sea, which constitutes the main portion of Tamaulipas. A little more than one and one half degrees of latitude of the whole area of Tamaulipas lies within the tropics. Vegetation, while luxuriant in places, is generally scant. Although one of the larger States of the Mexican Union, its population in

¹ I have adopted this name from the maps of my friend Don Antonio García-Cubas. The coast-range itself bears, of course, various local denominations in various places.

1878 amounted only to 144,747 souls, of which 11,682 belonged to Tampico alone.¹

The mouth of the Rio Pánuco was visited at an early period in the Spanish conquest, but the principal towns of the State were founded during the past and the present century. Camargo, on the Rio Grande, one of the oldest, dates back only to the 5th of March, 1749, whereas Tampico is but recently born (12th of April, 1823), as also Matamoras (28th of January, 1823) and Nuevo Laredo (1848).² From these facts it might be inferred that the aboriginal population of Tamaulipas would still be found in a condition relatively unaffected by foreign influences. Such, however, does not appear to be the case; for with the exception of the southern portion of its territory, where the Huasteco language prevails,³ the few remnants of Indians in the State seem almost completely to have lost the knowledge and practice of their peculiar idioms. This fact — stated by the two learned Mexican scholars, Francisco Pimentel and Manuel Orozco y Berra⁴ — does not preclude the possibility of still finding traces, at least, of the original tribes and of their languages. While

¹ Emiliano Busto, *Estadística de la República Mexicana*, 1880, pp. lxv. and lxvii.

² I have taken these data from Manuel Orozco y Berra, *Geografía de las Lenguas de México*, Parte III. cap. xvii. pp. 291, 292, Note 3.

³ *Ibid.*, p. 290: "La parte marítima del Sur, sin poder asignar la verdadera extension, estaba ocupada por los *huastecos*; . . ." The earliest mention which I find of the name "Huasteca" is by Hernando Cortés, *Carta Cuarta*, dated 15th of October, 1524, reprinted by Vedia in *Historiadores Primitivos de Indias*, vol. i. p. 96, "las provincias de Guatusco, Tustepeque y Guatasca," p. 103, "y llegó á la provincia de los Guatescos."

⁴ "Así es que, para situar cada una de las tribus, no tenemos otros datos que los lugares en que fueron congregados, y las indicaciones de los terrenos en donde pasaban su vida vagabunda; para sus costumbres, escasas noticias; para la distincion de las lenguas que hablaban, casi nada." — *Orozco y Berra's Geografía*, etc., p. 292. "Todas las tribus de Tamaulipas han desaparecido; en el siglo que ha pasado los descendientes de aquellos bárbaros se han fundido en la poblacion blanca, y si hoy se encuentra alguno es hablando el español y con el

the majority of Indians in Tamaulipas appear to have been roving tribes,—and thus may not have left behind them any vestiges of dwellings or objects of art,¹—local names might furnish a clew to forgotten tongues. A word, or even a syllable, in frequent use among a tribe long ago destroyed, is often more durable than the strongest wall, lasts longer than the most elaborately sculptured block. The latter becomes, finally, an obstacle to succeeding generations, and is therefore, if not ruthlessly destroyed, at all events abandoned to gradual decay; the living sound passes into the speech of the people, and thus remains.

The outlet of the Rio Pánuco is closed to vessels of large draught by a formidable bar, which was an obstacle even to the light craft of the Spaniards in the early part of the sixteenth century.² As early as 1518, Juan de Grijalva saw the mouth of the Pánuco, and anchored near it. His short stay was characterized by an unfriendly meeting with the natives.³ In

traje de la plebe.” — *Ibid.* p. 296. Francisco Pimentel, *Cuadro descriptivo de las Lenguas indígenas de México*, 1865, vol. ii. p. 251, mentions, beside the Huasteco, only the Lipan, a dialect of the Apache, as being still spoken in Tamaulipas.

¹ Orozco y Berra, *Geografía*, etc., pp. 290, 291, quotes, from a MS. of the year 1757, *Descripción general de la Nueva colonia de Santander*, etc., by D. Agustín López (original at the Archivo General), the statement that up to the Valley of Santa Bárbara, “se ven muchos vestigios de pueblos antiguos de Indios y de otras naciones que habitaron antes que los Indios que existen. . .” But this region lies along the upper Rio Pánuco.

² There is no mention of any of the early discoverers having entered the mouth. Antonio de Herrera, *Descripción de las Indias Occidentales*, edition of 1730, p. 18, says of the Pánuco River, “sino el Rio de Pánuco, i su Puerto, que no es muy bueno.”

³ *Itinerario de la Armada Del Rey Catholico en India Verso la Isola de Iuchathan Del Año MDXVIII*, etc., published, with an excellent Spanish translation by D. Joaquín García-Icazbalceta, in vol. i. of *Colección de Documentos para la Historia de México*. I mention this republication of the celebrated “Itinerario,” because it is the one I am now using. (Compare, in regard to this valuable report, my *Notes on the Bibliography of Yucatan and Central America*, kindly published, at the instance of my friend Mr. S. Salisbury, Jr., by the American Antiquarian Society, in its *Proceedings*, Oct. 21, 1880.) Bernal Díez de Castillo,

1522-23, Hernando Cortés and Francisco de Garay almost simultaneously attempted the conquest of the region. The former ultimately succeeded, thus "pre-empting" on the latter's rights.¹ It appears that the tribes of the Pánuco were all sedentary Indians, who lived in houses made of wood, sometimes built on platforms of earth.² These tribes spoke the Huasteco language. This idiom is known to be a branch of the Maya, and closely allied to that dialect of the latter called the Tzendal of Chiapas.³ Few vestiges of habitation, if any, have been recorded as existing in the southern portions of Tamaulipas, yet this is no proof of their non-existence. South of the Rio Pánuco, however, ruins of houses, of mounds, even of entire pueblos, are mentioned.⁴ In addition to the well-known localities of which Mr. H. H. Bancroft has collected information, I was informed by Señor Nuñez, of Tampico, that the pueblo of Tampachichi still

Historia verdadera de la Conquista de Nueva España, in Vedia, vol. ii. cap. xvi. p. 13. Gonzálo Fernandez de Oviedo y Valdes, *Historia natural y general de las Yndias*, reprinted by the late Don José Amador de los Rios, in 1853. Oviedo was not, like the two preceding authors, an eye-witness; but at all events he was a contemporary, and reports from eye-witnesses. His statements in regard to Grijalva are found in vol. i. lib. xvii. cap. xv. and xvi. pp. 529 and 530.

¹ Cortés, *Carta Segunda*, Vedia, vol. i. p. 14; *Carta Cuarta*, Ibid. pp. 99-108. Bernal Diez de Castillo, *Historia verdadera*, etc., Vedia, ii. cap. lx. p. 52, cap. clxii. pp. 212-218. Hernando de Ceballos, *Demanda en nombre de Pánfilo de Narvaez*, etc., in García-Icazbalceta, *Coleccion de Documentos*, vol. i. p. 443. Oviedo, *Historia Natural*, etc., vol. iii. lib. xxxiii. cap. ii. pp. 262, 263, and cap. xxxvi. pp. 449-455.

² Cortés, *Carta Segunda*, Vedia, i. p. 14. Oviedo, *Historia General*, vol. iii. lib. xxxiii. cap. ii. p. 263.

³ C. H. Berendt, *Remarks on the Centres of Ancient Civilization in Central America and their Geographical Distribution*, from *Bulletin of the American Geographical Society*, Session 1875-76, No. 2, p. 10. Orozco y Berra, *Geografía*, etc., i. pp. 20, 21.

⁴ H. H. Bancroft, *The Native Races of the Pacific States*, vol. iv. pp. 461, 462, 463. G. F. Lyon, *Journal of a Residence and Tour in the Republic of Mexico in the Year 1826*, vol. i. chap. i. pp. 51-62. Orozco y Berra, *Geografía*, etc., p. 290 of Part III.

exhibits remains of stone foundations, possibly antedating the Conquest.

The Huasteco district becomes interesting through an old tradition, which is said to designate the Rio Pánuco as the place where a tribe most conspicuous in the confused past of Mexico, the Toltecs, disembarked.¹ Should this tradition prove to be authentic, it would be another link in the chain

¹ Perhaps the earliest printed notice of the arrival of Aborigines on the gulf-coast is found in Francisco López de Gómara, *Segunda parte de la Crónica general de las Indias, que trata de la Conquista de México*. My quotation is taken from the reprint in Vedia, vol. i. p. 432: "Xicalancatl anduvo mas tierra, llegó á la mar del Norte, y en la costa hizo muchos pueblos; pero á los dos mas principales llamó de sus mismo nombre. El uno Xicalanco está en la provincia de Maxcalcingo, que es cerca de la Vera Cruz, y el otro Xicalanco está cerca de Tabasco." This quotation, however, appears gathered from the same source (the Franciscan friars under the direction of Bishop Zumárraga) as the statement—still older—made by Fray Toribio de Paredes, surnamed Motolinía, *Historia de los Indios de la Nueva España*, in Icazbalceta, *Colecc. de Documentos*, vol. i., "Epístola proemial," pp. 7, 8. The latter version, however, is quite different. Neither of the two earliest sources speaks positively of a "landing," but only of the Xicalancas reaching the coast from the interior. The first intimation of a "landing," however, I find in Fray Bernardino de Sahagun, *Historia general de las cosas de Nueva España*: edition of Bustamante, 1830, vol. iii. libr. x. cap. xxix. pp. 132, 133. Speaking of the Cuextecas, he says: "El nombre de todos estos tómas de la provincia que llaman Cuextlan, donde los que estan poblados se llaman Cuextecas, si son muchos, y si uno Cuextecatli, y por otro nombre Toveiome cuando son muchos, y cuando uno Toveio, el cual nombre quiere decir nuestro prójimo. A los mismos llamaban Panteca, ó Panoteca, que quiere decir hombre del lugar pasadero, los cuales fueron así llamados, y son los que viven en la provincia de Pánuco, que proprámente se llaman Pantlan, ó Panotlan, quasi panoaia, que quiere decir, lugar por donde pasan, que es á orillas, ó riberas de la mar, y dicen que la causa porque les pusieron nombre de Panoaya es, que dizque los primeros pobladores que viniéron á poblar á esta tierra de México, que se llama ahora india occidental, llegaron á aquel puerto con navios, con que pasaron aquella mar." But the author does not mention the Toltecas as being those who landed. The statement that the latter tribe settled at Pánuco is first made by Antonio de Herrera, *Historia general de los Hechos de los Castellanos en las Islas y la Tierra firme del Mar Océano*, edition of 1730, vol. ii. dec. iii. lib. ii. cap. xi. p. 62, and again by Fray Juan de Torquemada, *Los veintium Libros Rituales i Monarchia Indiana*, etc. edition of 1723, vol. i. lib. iii. cap. vii. pp. 254, 255. Both authors allude to the "landing" of foreigners

of indications which tend to identify the Toltecs with the Maya. The name given to the place of landing, by the earliest writers who report the tradition, is "Tamoanchan."¹

The coast south of the mouth of the Rio Pánuco presents, besides a vigorous growth of vegetation, the pleasant feature of almost continuous mountain-chains looming up in the distance. The Sierra de Tantima borders the horizon. Between it and the sandy shore extends, unseen from ship-board, the vast lagune of Tamiahua. All this region was formerly, and still is, inhabited by the Huastecas. The short time at my disposal for making inquiries in regard to that tribe did not permit me to obtain results of much value. I was told in perfect good faith, though perhaps without the needed basis of knowledge, that they were good Indians, who had willingly submitted to the changes in their former organization and customs introduced by the laws of 1857,—abandoning, among other things, the communal tenure of lands practised until then. I was also informed that the language was divided into three dialects.²

The distance from the mouth of the Pánuco to the mouth of the Rio Tuxpan is about 146 kilometres (90 miles English). As usual along this coast, a considerable bar lies at

near Pánuco, afterwards called Toltecs, by the natives. Both authors are posterior to Sahagun.

¹ Sahagun, *Historia general*, etc., vol. iii. lib. x. cap. xxix. pp. 139, 140. The syllable "Tam" is said to signify place, and to be the equivalent, in the Huasteco language, of the Nahuatl or Mexican "tlan," "pan." Buschmann appears to incline towards identifying it with the Mexican words (Joh. Carl Ed. Buschmann, *Ueber die aztekischen Ortsnamen*, 1853, vii. pp. 106-109), thus favoring the inference that it shows either an original connection between the two tongues, or the influence of the Mexican upon the Huasteco. Be that as it may, the word is now an integral part of the Huastecan idiom, and was so three hundred years ago; and it is a singular coincidence, at least, to find a local name in a language derived from the Maya so closely connected with a tradition concerning the Toltec tribes.

² This indicates a local division analogous to that of the Mixteco.

the outlet of the river, offering the usual impediments to navigation into the port of the little city of Tuxpan, which stands about 12 kilometres (7 miles English) up the river. Its population, now estimated at 7,000, is given officially at 5,979 in 1878, while the whole district of Tuxpan is credited with 29,393 inhabitants.¹ On the south bank of the Tuxpan River extends the district of Papantla, half covered with immense woods of mahogany cedar. Its population of 21,159 souls² (of which 14,267 are found in the widely scattered pueblo of Papantla proper) busies itself with rather primitive agriculture, of which tobacco, coffee, sugar, maize, and vanilla are some of the leading products.³ Maize yields two annual crops, but in the months of November and December of the year 1880 late and unusually heavy rains so thoroughly devastated the fields that Indian corn had to be imported from New Orleans. The little city of Tuxpan enjoys a lively commerce. If the great obstacle of the bar were removed, even large steamers might safely anchor in the river; and in that case the projected railroad line from Tuxpan to the City of Mexico would speedily be built, — an enterprise threatening to the commercial preponderance of the port of Vera Cruz.⁴

The Huasteco language is spoken to the north of Tuxpan, in its immediate vicinity.⁵ South of it, and as far down as Vera Cruz, several aboriginal idioms are represented. Along the coast the Nahuatl, or Mexican proper, now prevails, with

¹ Busto, *Estadística de la República Mexicana*, i. p. lxxi.

² Ibid. p. lxxii.

³ The vanilla of Papantla is justly famous in Mexico. It grows as a creeper on *Swietenia mahoganí*, and also on *Anona oblongifolia*, but at Papantla principally on the former.

⁴ The line from Tuxpan to the City of Mexico is shorter and has an easier grade than the Vera Cruz Railroad.

⁵ Orozco y Berra, *Geografía*, etc., iii. 207. Pimentel, *Cuadro*, etc., vol. ii. p. 5.

patches of the Totonaco interspersed.¹ The slopes of the high coast-range are mostly settled by Totonacas, but the Nahuatl Indians also have settlements, and in the north-west corner there are pueblos in each of which two, sometimes three, linguistical stocks are represented; among them the Othomi. Such pueblos were formed by direction of the missionaries, — mostly Augustines in this part of the country, — at the close of the sixteenth and beginning of the seventeenth century.²

There are indications of striking changes in the ethnography of the region south and southwest of Tuxpan, during and after the time of the Conquest. Thus the large pueblo of Papantla is now exclusively Totonaco; but from a description of the bishopric of Puebla (then including the whole present State of Vera Cruz), written about 1571 or 1572, it appears that the Nahuatl language was then spoken there. Misantla, now exclusively Totonaco, then contained families speaking Nahuatl.³ Nauhtla, on the coast, was regarded at the time of the Conquest as a settlement of Indians speaking the Mexican idiom;⁴ at present it belongs to the To-

¹ Orozco y Berra, *Geografía*, etc., pp. 202–205, gives a catalogue of the pueblos of both languages in the State of Vera Cruz.

² Fray Joan de Grijalva, *Crónica de la Orden de N. P. S. Augustin en las provincias de la Nueva España*, 1624. Edad I, cap. xviii. p. 32.

³ *Descripción del Obispado de Puebla, hecha por el Chantre Alonso Perez de Andrada, en Nombre del Cabildo, sede vacante*, MS., original belonging to D. Joaquín García-Icazbalceta, p. 9. On p. 2 it is stated that the bishopric is vacant through the demise of D. Fernando Villagomez. Bishop Villagomez died Dec. 3, 1570; and his successor, D. Antonio Ruiz de Morales y Medina, was installed Nov. 1, 1573. Fray Agustín de Vetancurt, *Teatro Mexicano*, reprint of 1871, vol. ii. p. 374.

⁴ Torquemada, *Monarquía*, etc., lib. iii. cap. x. pp. 261, 262, ascribes the settlement of the region of Nauhtlan to the Teochichimecas, and intimates that they may have been Otomites! The names of the leaders of Nauhtlan whom Cortés had executed for their attack on the Totonacos and their Spanish allies are strictly Nahuatl. Cortés, *Carta Segunda*, in Vedia, i. pp. 26, 27; Bernal Díez, *Historia Verdadera*, etc., Vedia, ii. cap. xciii. xciv. xcv. pp. 92–93. The

tonacas.¹ The number of the population seems also to have undergone change. Thus Papantla and its neighboring pueblo, Tuzapan, contained in 1571-72 "one hundred and fifty families;"² in 1878, as already stated, Papantla alone figures in the official census with 14,267 inhabitants. Misantla also has considerably increased from the six hundred families with which it is credited in 1571.³ On the other hand, the old pueblo of Cempohual, reported populous in 1519, had dwindled down to "twelve tributary Indians" less than fifty-five years afterward.⁴ These few indications go toward strengthening a conviction which I reached in other

former speaks of one of them as chief of the place: "señor de aquella ciudad;" the latter mentions them as Mexican captains: "y los capitanes mexicanos respondiéron, . . ." p. 94. Andrés de Tápia, *Relacion hecha sobre la Conquista de México*, in Icazbalceta, *Colecc. de Documentos*, vol. ii. p. 579, speaks of Nauhtla as "á un pueblo de un vasallo de Muteczuma." The difficulty is commonly obviated by supposing that the Mexicans kept a garrison at or near Nauhtla. Oviedo (*Hist. General*, etc., vol. iii. lib. xxxiii. cap. v. p. 286) is, however, very positive. Not only does he confirm the words of Cortés, but he adds that Cualpopoca excused himself for not having gone to Vera Cruz "é á se ofrescer por tal vasallo con todas sus tierras é gente, era la causa que avia de passar por tierra de sus enemigos." These enemies were the Totonacos. I have, in my essay *On the Art of War and Mode of Warfare of the Ancient Mexicans*, p. 100, note 18, endeavored to disprove the existence of so-called Mexican garrisons. The chiefs from Nauhtla were therefore either Mexican stewards, or Nahuatl chiefs. I believe the evidence to be decidedly in favor of the latter. Fray Diego Durán, *Historia de las Indias de Nueva España y Islas de Tierra firma*, vol. ii. cap. lxxii. p. 23, speaks of "Coatlopococa" as "el principal de aquel pueblo."

¹ Orozco y Berra, *Geografía*, etc., p. 205.

² Perez, *Descripcion del Obispado de Puebla*, MS., p. 9. Tuzapan was a considerable pueblo, often mentioned during the Conquest.

³ Perez, *Descripcion*, etc., p. 1.

⁴ Of the exaggerated reports about the size of Cempohual at the time of the Conquest, I need make no special mention here. In 1540, according to Grijalva (*Crónica*, etc., cap. xxx. p. 50), it was "una poblason grandíssima." It held, according to Perez (*Descripcion*, etc., p. 14), "doze tributarios." According to Torquemada (*Monarchia*, etc., lib. iv. cap. xix. p. 397), about 1600, the site was almost completely abandoned, its inhabitants being reduced to three or four persons.

parts of Mexico; namely, that the results of the Conquest have been, so far as the number of aboriginal population is concerned, a *displacement*, rather than a *diminution*. Such changes of location in consequence of violent disturbances are natural to the Indian character. They occurred, too, before the Conquest, and account in Mexico, as well as in New Mexico,¹ for the abundance of ruins met with in every part of the country. In regard to absolute aboriginal population, I am satisfied that it has increased within the past three hundred and sixty years.

The Totonaco language has been supposed to belong to the same stock as the Huasteco, and thus to be related to the Maya idioms.² The Totonacos were a sedentary tribe living in houses built in part of stone.³ They used the *metlatl*, or grinding-slab of stone,⁴ dressed in cotton, wrought ornaments of gold and of green stones, carved large blocks into fanciful shapes for the purposes of worship, and used weapons similar to those of other Mexican tribes.⁵ They appear to have formed a tribal confederacy with the executive power vested in two pueblos, — Cempohual and Chiahuitztlan, — and to have allied themselves with tribes of Nahuatl stock for

¹ I found in New Mexico, west of Santa Fé, ruined pueblos almost at every step. My Indians positively assured me that these had been occupied, not simultaneously, but successively. The Indian seldom "repairs."

² Orozco y Berra, *Geografía*, etc., p. 20. Bancroft, *Native Races*, vol. iii. p. 776. The latter boldly classifies the Totonaco with the Maya; the former regards it as doubtful, "*pertenecen dudosamente*."

³ I refer to the well-known descriptions of the conquerors. The term "*cal y canto*," so liberally employed by them, should, however, be taken with reserve, as a comparison only, until the binding material of the walls has been duly tested.

⁴ I have been informed that the usual fragments of *metates* are very common, as well on the site attributed to old Cempohual as in other ruined localities of the coast and slope.

⁵ Cortés, *Carta Segunda*, p. 14. Bernal Diez, *Historia Verdadera*, cap. xli. p. 36; cap. xlv. p. 39; cap. xlv. p. 40; cap. li. pp. 44, 45.

protection against the inroads of the Mexicans and their confederates of the Central Valley. It is known how they were overcome and became tributary to the fierce invaders.¹ At the present time the Totonacos are said to be peaceable Indians (although others assert the reverse), but, in those pueblos which nestle on the slope of the coast-range, to cling with great tenacity to their former usages and customs. They are conservative enough to have preserved (I was told), in many pueblos, their communal tenure of lands, against the federal laws of Mexico. It thus would appear that the Totonacos had the same system of landed tenure as the ancient Mexicans themselves.

It is commonly stated that aboriginal ruins are to be found in all parts of the State of Vera Cruz.² These ruins, however numerous, should be explored according to a system based on historical knowledge. Certain places were inhabited at the time of the Conquest, and it has long been my opinion that these localities ought to be selected, identified, and thoroughly explored before others. The results of discoveries there would not only form a healthy check on the statements of eye-witnesses of the time when the buildings were still occupied, but they would also become valuable criteria for judgment of other localities, where the light of documentary history is absolutely wanting. Thus the site of the pueblo of Cem-pohual, whose inhabitants played such a conspicuous rôle in the history of the Conquest, should become an objective

¹ The most circumstantial accounts are found in Durán, *Historia de las Indias de Nueva España*, etc., vol. i. cap. xxi. pp. 180-187, and cap. xxiv. pp. 199-207; in Fernando de Alvarado Tezozomoc, *Crónica Mexicana*, published by Señor J. M. Vigil in 1881, cap. xxxi. pp. 325-328; cap. xxxii. pp. 329-333; cap. xxxiv. xxxv. pp. 343-349; and in an anonymous fragment entitled *Noticias Relativas al Reinado de Motecuzuma Ilhuicamina*, pp. 128-130. The latter has been printed by my friend Vigil in the same volume as the *Crónica*.

² Mr. Bancroft (*Native Races*, vol. iv. cap. viii.) has gathered all the scattered reports extant on the antiquities of Vera Cruz.

point. Its location, as well as the condition of the ruins, is variously stated.¹ At all events, it was not on the coast, but on one of the long slopes ascending towards the high Cordillera. The site of Chiahuitztlan has, as yet, not become the object of systematic research. In fact the route of Cortés from the gulf-coast towards the interior has never been thoroughly traced, still less explored. While we naturally tend to the belief that he ascended towards the Cofre de Perote, this belief is not based upon ascertained fact. Important ruins near the Puente Nacional² seem to justify the assumption that the Spaniards took that route; but the equally striking vestiges near the narrow gorge of the Chiquihuite, or Atoyac, on the line of railroad from Vera Cruz to Mexico,³ remind the student forcibly of the pueblo of Cingapacinga, so much dreaded by the Totonaco, and graphically described by eye-witnesses of the Conquest.⁴

Furthermore, it would be well to examine the site of Nauhtla, otherwise called Almeria, — an Indian pueblo whence came the first successful aggression upon the whites by the Aborigines. Nauhtla lies on the coast, in the apex of an isosceles triangle formed by it and the two Totonaco pueblos of Papantla and Misantla. At present it is asserted to be a Totonaco settlement; but whether it was so three hun-

¹ Besides the locality now called "Cempoalla," I have heard Paso de Ovejas also mentioned as the possible site of the old pueblo.

² Bancroft, *Native Races*, vol. iv. cap. viii. pp. 437, 438. Dr. Frederick Mercker, of Huatusco, described these ruins to me as very important.

³ I at one time thought that Cortés might have taken the route by Orizaba or Córdoba; but Dr. Mercker convinced me that he could not have done so. The route is impracticable; the apparent passes terminate in a *cul de sac*, or stop suddenly on the brink of an inaccessible gorge. Of the road by Perote no exploration has yet been made.

⁴ Among the many names, all more or less distorted, which have been given to this pueblo, there is one which appears to be at least uncorrupted. It is given by Andrés de Tapia (*Relacion*, p. 566), and reads "Tizapancingo."

dred and sixty years ago is doubtful. Considerable importance is to be attached to such specific points as these, since they may throw light on the origin of the very remarkable ruins of Misantla, Metlatltoyuca, Tuzapan, and of the Tajín, near Papantla.

My knowledge of these ruins is limited to what has been printed concerning them and to hearsay. I had to abandon my original plan of reaching Papantla, on account of a severe attack of illness. The few descriptions and pictures of them seem to reveal a style of architecture perhaps more closely allied to that of Yucatan, Tehuantepec, and Cuernavaca, than to that of Mitla and of the Central Valley.¹ Still, as I have not seen the ruins myself, I can but call attention to certain apparent analogies and discrepancies, at the risk of going astray even with such cautious premises.

In addition to the places already mentioned as containing vestiges of aboriginal architecture, I would state that I have heard mentioned ruins at Cazonas, near Tuxpan, and also along the Rio Tuxpan, below the city itself.

While anchored off the bar at the latter port, the traveller is occasionally treated to a view of the two gigantic summits of the Mexican coast-range, — the Cofre de Perote, or Nauhcampatepetl, and the snow-clad volcano of Orizaba, otherwise called Volcan de San Andrés, and in the native Mexican language, "Citlaltepetl" or star-mountain. The latter lies, on an average, 210 kilometres (130 miles) from

¹ Compare in Bancroft, *Native Races*, vol. iv., the following plates: p. 370 ("Pyramid near Tehuantepec"), p. 442 ("Type of Pyramids at Centla"), p. 194 ("Casa del Adivino at Uxmal"), p. 240 ("Mound at Mayapan"), p. 443 ("El Castillo at Huatusco"), p. 456 ("Pyramid at Tusapan"). In regard to the "Tajín" near Papantla, figured in the volume on p. 452, it is interesting to compare it with the restoration of the edifice of Xochicalco (after Alzate), by Brantz-Mayer, *Mexico as it Was and as it Is*, 1844, p. 186. These are, of course, mere hints, which may prove utterly valueless.

the mouth of the river Tuxpan ; the former is much nearer. Owing to the great altitude of both peaks, respectively about 5,300 and 4,100 metres (17,400 and 13,400 feet English), they are seen even at a greater distance yet.¹ On the evening of the 19th of September of the present year I saw plainly the dark, dice-like protuberances capping the broad ridge of the Cofre, while the steep, silvery cone of Orizaba loomed up above distant clouds far to the south. (Plate II.)

It so happened that both times when I made the passage between Tuxpan and Vera Cruz the sky was unusually hazy, even shrouding the details of the coast-line. Only the dense forests at the mouth of the Rio Tecolutla, famous for their supply of mahogany, and, further south, the glistening white sand-hills, or *médanos* along the shore remained visible. The harbor of Nauhtla, as well as the historically famous place of settlement, by direction of Cortés, at Antigua, where the town of Vera Cruz was first established,² were passed at night ; and when, on March 1, 1881, day began to dawn, the first rays of sunlight fell on the Isla de los Sacrificios, low and sandy, with the city of Vera Cruz beyond it, lying like Venice in the waters, with its Moorish cupolas and projecting wharves, while the snow-clad Orizaba grandly towered above it.

¹ Approaching the coast from Habana, the "Pico," as the volcano of Orizaba is often called, is seen at least one hundred and fifty miles, if not two hundred miles, off. Owing to its white glistening cone of snow, it is greeted by sailors as "la paloma del mar." It is singular that the *Itinerario de Grijalva* makes no mention of the Orizaba. Bernal Diez, who was in the same voyage, distinctly mentions the sight of the snow-clad peak from "Guacayualco," which must be the Rio Coatzacoalcos, — *Historia Verdadera*, cap. xii. p. 11 : "é luego se parecieron las grandes sierras nevadas, que en todo el año están cargadas de nieve." The distance from the mouth of Coatzacoalcos to the "Pico," in a straight line, is at least two hundred miles English.

² The place is still called La Antigua, from "La Antigua Villa Rica de la Vera Cruz," — "the ancient (or old) town of the true cross." Compare Humboldt, *Essai Politique sur la Nouvelle Espagne*, edition of 1827, vol. ii. p. 210.



MOUNT ORIZABA FROM VERA CRUZ

The island of Sacrificios is known, and has derived its name, from the human sacrifices performed there at the time Juan de Grijalva first landed on it.¹ No vestiges are said to be left of the small structures of stone described as having existed on it in 1518; but from the exceedingly valuable report on the National Museum of Mexico, left us by the late Colonel Brantz-Mayer, we gather that the burial vases and other remains subsequently found there were of the kind noticed by the Spaniards during their first visit.² It is evident that the Indians who met Grijalva and afterwards Cortés on the beach were Nahuatl, but that the beach itself was not inhabited, the Indian pueblos being situated towards the interior, hugging the base of the high-coast range.³ Were it not for its extreme unhealthiness, the vicinity of Vera Cruz would not be an improper site for settlement. Indian villages might have grown up there. Extensive swamps in which low palms and calladiums occasionally grow, and dry sandy patches here and there covered with

¹ *Itinerario de Grijalva*, in Icazbalceta's *Colecc. de Documentos*, vol. i. pp. 296, 297. Bernal Diez, *Historia Verdadera*, etc., cap. xiv. p. 12; cap. xxxviii. p. 32.

² *Itinerario de Grijalva*, p. 298: "Mientras el capitán hablaba, desenterró un cristiano dos jarros de alabastro, dignos de ser presentados al Emperador, llenos de piedras de muchas suertes." These "jars" are mentioned also by Francisco Lopez de Gómara. *Segunda Parte de la Crónica*, etc., Vedia, i. p. 299: "Dos cantarillos de alabastro, llenos de diversas piedras algo finas, y entre ellas una que valió dos mil ducados." Brantz-Mayer (*Mexico as it Was and as it Is*, pp. 96, 97) reproduces a vase, of beautiful outline, made of white marble, coming from the island of Sacrificios. I have seen similar vases, and probably the identical one, at the Museo Nacional of Mexico. It may be of alabaster; but any one who has seen the magnificent veined and multi-colored marble of Tecali, in the State of Puebla, becomes loth to decide the question without a test by the means of acids.

³ The beach was called "Chalchiuhcueccan." The noted Abbé C. E. Brasseur de Bourbourg (*Histoire des Nations Civilisées du Mexique et de l'Amérique Centrale*, vol. i. p. 143) mentions vestiges of ancient buildings beneath the waters of the bay, between the city of Vera Cruz and the castle of Ulúa. It is the only notice of such remains of which I have any knowledge. Within times accessible to fair tradition, the beach is reported as uninhabited.

scrubby thickets in which lanthanas, red abutilons, and cacti abound, form the most striking features of the unattractive landscape in the immediate neighborhood of the city. But the harbor, however imperfect, is more accessible than any other now in use on the same coast; and this fact accounts for the great hold which the city has upon the commerce of Mexico with outside ports,—a hold which, to the credit of its commercial population, is ably and skilfully improved.

Only “subsoil” examination could satisfactorily determine the question whether the shores of Vera Cruz were ever settled previous to the arrival of the Spaniards. I am not competent to report whether antiquities exist on the beach or not. If, as I am led to suppose, none are found there, then the existence of buildings for worship on the Isla de los Sacrificios, far in advance of the actual settlements, becomes an interesting feature. It finds a parallel on the coast of Peru, where even the islands of Chincha were used as places of sacrifice by the inhabitants of the mainland.¹

I have already alluded to the extreme unhealthiness of Vera Cruz, or rather to its reputation for extreme unhealthiness. Its climate, warm and moist, is less trying for those who land there than for such as descend abruptly into it from the central highlands. Nine hours of travel by the Vera Cruz and Mexico Railroad bring the tourist from La Esperanza² to the sea-coast,—a fall of over 2,500 metres (8,300 feet English). Such a change is strongly felt. The reputation of the sickliness of Vera Cruz is based on the

¹ Pedro de Cieza de Leon, *La Crónica del Perú*, in Vedia, vol. ii. cap. iv. pp. 357, 358; cap. v. p. 359. Joseph de Acosta, *Historia natural y moral de las Indias*, 1608, lib. i. cap. xix. p. 68.

² Esperanza, although it contains little more than extensive railroad buildings and a very good hotel, is one of the main stopping-places along the whole route.

prevalence of the "vómito," or yellow-fever. The disease appears to be endemic there, with sporadic outbursts of great violence. During such periods it sometimes creeps inland; and this year it has, as an epidemic, ravaged the mountain slopes as far as Jalapa and Córdoba, and reached as near to Orizaba as the Fortin.¹

The fact that the beach proper was in all probability almost destitute of permanent habitations until after the Conquest,² and the absence of positive documents, render it difficult if not impossible as yet to decide the question whether or not the *vómito* existed on the coast previous to the time of early Spanish settlement. At all events, the assertion of Clavigero, that yellow-fever appeared but recently, appears doubtful.³ Of the two great epidemics which devastated central Mexico about 1545 and 1576, known in part as the *cocoliztli*, little is ascertained beyond the fact that they were characterized by copious nose-bleeding. This would seem rather to connect them with the *mazaquiauill*, or spotted typhus, now common in the State of Puebla among the Indians, than with the *vómito* proper.⁴

¹ For these places I refer to the map of the Vera Cruz and Mexico Railroad executed by García-Cubas.

² I do not consider occasional discoveries along the shore, even if "subsoil," any proof of former habitation. The statement by Brasseur, referred to in a previous note, needs confirmation. The Abbé has supposed a *town* of "Chalchiuhcuecan," which never existed.

³ Abbé F. X. Clavigero, *Geschichte von Mexico*, 1789, vol. ii. pp. 460, 461, note (n). This is a German translation of the Italian original, *Storia di Messico*.

⁴ The *mazaquiauill*, or *mazaquauill* as Dr. Mercker has given me the word, is common around Puebla. It is endemic in that region, and prevails mostly among the Indians. With due deference to the authority quoted, I still have doubts about the word. I would respectfully suggest that it might be *matlazahuatl*, or at least the same disease. Humboldt (*Essai Politique sur la Nouvelle Espagne*, vol. iv. pp. 161, 162) identifies the *matlazahuatl* with the *cocoliztli* of 1545 and 1576. Both the *matlazahuatl* (of later epidemics at least) and the so-called *mazaquiauill* of to-day were and are confined to the high table-

The coast-region extending between the beach at Vera Cruz and the entrance into the gorges of the high Cordillera at the Chiquihuite, or Atoyac, is a low, sandy, and marshy plain. Although there is no lack of either water or heat, vegetation is stunted, possibly in part owing to the periodical excess of both elements. This plain is not thickly peopled along the line of the road; and the people are all classified (the Creoles and foreigners of course excepted) among the Nahuatl, or of the same linguistical stock as the Mexicans proper.¹

The Cordillera presents an abrupt dark-green front of lofty mountains, above which towers the snow-clad Orizaba. The road enters the highlands through the narrow and very picturesque pass of the Atoyac, and the scenery changes. In appalling curves we wind our way upwards through gorges, along fearful chasms and slopes covered with the most luxuriant vegetation of the tropics. In the little valleys beneath, thatched roofs of Indian dwellings rise among plantains and tree-like shrubs of hibiscus, covered with large scarlet blossoms. An occasional hacienda appears in the distance, like a white quadrangular fort; also villages, with the Moorish dome of their church peeping out of thick foliage. It is the landscape of the tropics resting, as it were, on the southern Alps, where they descend towards the plains of Lombardy.

lands. It is doubtful as to the *cocoliztli*. I may add here, in reference to the fact that this year the *vómito* reached as high as the Fortin above Córdoba and very near to Orizaba, that the height of Córdoba, according to E. Guillemin, as reported in *Petermann's Geographische Mittheilungen*, 1869, p. 230, is 928 metres (3,034 feet English). According to Humboldt (*Essai Politique*, etc., vol. iv. p. 192) the hacienda del Encero was, at his time, the highest limit of the disease. He determined its altitude to be 928 metres also. The peculiarity of this year's spread of the *vómito* seems to consist, therefore, not so much in its having reached a higher elevation above sea-level, as in its having gone further inland, following the central artery of travel.

¹ Orozco y Berra, *Geografía*, etc., pp. 200-202.



HOUSES OF THE NATIVES, ON THE COAST.

On the beautiful morning of March 2, 1881, when I first passed through this wonderful region, the summit of Orizaba rose above the glorious landscape like a cone of molten silver, in a cloudless sky. On the left side of the road, about 10 kilometres (six miles) east of Córdoba, Mr. A. G. Alexander, the skilful American photographer of Vera Cruz, noticed several ruined mounds, one of which in particular was "very large, and made of a kind of stone which is not found in the vicinity." He excavated it to some extent, and found stone statues, arrow-heads of obsidian and flint; also, heads of clay and fragments of common pottery. The locality may be one of those mentioned by Dupaix,¹ and, after him, in the great work of Mr. H. H. Bancroft,² near Amatlan de los Reyes.

The houses of the natives on the coast (Plate III.) and in the warm valleys of the lower coast-range are of upright reeds or canes, very airy, and with steep, four-sided roofs of thatch, palm-leaves, or leaves of the *maguey*. Each family has often two and three houses; and, in case there is but one, it is so subdivided as to correspond to the three buildings. I shall return to this peculiarity hereafter.

From Córdoba, which appears shrouded by plantations of coffee, sugar, and tobacco, by tropical fruit-trees of many kinds, and blooming with the exquisite flowers of the hibiscus, the road rapidly approaches the true slopes of the great volcano. Already occasional glimpses through side-gorges reveal for a short time these slopes in their broad extent and oppressive grandeur. At Orizaba the giant bursts out into full view; and as the city lies (according to E. Guillemin) 1,282 metres above the level of the gulf,³ the

¹ Kingsborough, *Antiquities of Mexico*, vol. v. pp. 213, 214; vol. vi. pp. 424, 425; vol. iv. plate iv. figs. 8 and 9.

² *Native Races*, vol. iv. p. 435.

³ *Petermann's Geographische Mittheilungen*, 1869, p. 230.

Pico (its height being 5,295 metres, or 17,368 feet English, according to García-Cubas) towers 4,013 metres (12,162 feet) above it, at a distance of not more than 40 kilometres (25 miles English) to the N.N.E. I mention these figures so as to give an idea of relative proportions and their effect.

The districts of Orizaba and Córdoba are among the most populous of the State of Vera Cruz. The former, in 1878, contained 41,545 inhabitants (of which 14,161 were in the city); the latter, 36,098, — 11,302 of which were included in the town of Córdoba. The population of the whole State being given at 504,970, it follows that these two adjoining districts together contain nearly one sixth of the whole number.¹

The name Orizaba is a corruption of the Nahuatl word "Ahuilizapan," of uncertain etymology. Hardly anything is known about the tribe peopling this territory up to the middle of the fifteenth century, when Indian tradition represents them as allies of the Totonacos of the coast against a common enemy, the Mexicans and their confederates.² These Iroquois of the South — as their mode of conquest, their ferocity and organization for the purpose of warfare, may justify us in calling them — had reached in their forays the vicinity of the peak of Orizaba,³ from two opposite directions. After the bloody and protracted conflicts with the tribe of Chalco,

¹ Busto, *Estadística*, etc., vol. i. p. lxxi.

² Orizaba, alone, never appears conspicuous. Even Fernando de Alba Ixtlil-xochitl, *Relaciones históricas*, in Kingsborough, vol. ix., *Octava Relacion*, does not mention it among the older settlements.

³ They fell on tribe after tribe, leaving the most powerful ones untouched. Thus they "rounded" the great volcano, leaving Atlixco, with the strongly fortified pueblo of Quauhquechollan — now Huacachula — and the numerous tribe of Cholula, to the north. Cholula was separated from Tepeaca by the unoccupied country where the city of La Puebla de los Angeles now stands, and had no claim upon any connection with it. When, therefore, the Valley Confederates, after overpowering Chalco, crept up to Tepeaca, the latter surrendered almost without resistance.

the passage to the south of the great volcano of Popocatepetl was open to them, and they took advantage of it to fall upon the tribe of Tepeaca, southeast of the present city of Puebla. After exacting tribute from that pueblo and its neighbors of Tecamachalco, they found themselves within convenient reach of the fertile valleys around Orizaba.¹ About the same period it appears that they also descended upon the coast from the north side of the volcano of Orizaba. The pueblos of Tuxpan, Tamapachco, Toxtepec,² and others had provoked the ire of the confederates by an act of treachery not uncommon among the Indians of Mexico. They had murdered some traders from the pueblos of the Central Valley, who were visiting the fairs then held every twenty days, more or less, in each pueblo.³ It was a provocation welcome to the Valley Confederates. The distance was no impediment to them. Marching in a straight line to the northeast, they fell upon the Huastecos of the coast and overpowered them with the usual slaughter.⁴ Thus the road to Orizaba was open to the Mexicans and their allies from two sides; but it appears that they approached the ill fated tribe from the west, through what is now the State of Puebla. An insolent demand upon it for tribute, under the disguise of "presents," was the first formal intimation of danger. This demand was refused on instigation, it is said, of the Tlaxcal-

¹ No tribe of any consequence, only thinly inhabited lands with scattered settlements, intervened between Tepeaca and the valley of Orizaba.

² *Noticias relativas al reinado de Muteuczuma Ilhuicamina* in *Biblioteca Mexicana*, p. 128. Tezozomoc, *Crónica*, etc., *ibid.* cap. xxviii. pp. 312, 313. Durán, *Historia de las Indias de Nueva España*, vol. i. cap. xix. pp. 165-174. Ixtlilxochitl, *Histoire des Chichimèques ou des anciens rois de Tezcuco*, vol. i. cap. xl. pp. 286-288. Vetancurt, *Teatro*, etc., vol. i.; Parte Segunda, cap. xv. pp. 300-302.

³ Durán, *Historia*, etc., vol. i. cap. xix. p. 165. Tezozomoc, *Crónica*, etc., cap. xxxviii. p. 310.

⁴ *Noticias relativas al reinado*, etc., p. 128. Durán, *Historia*, etc., vol. i. cap. xix. pp. 165-174. Tezozomoc, *Crónica*, etc., cap. xxviii. pp. 312, 313. Torquemada, *Monarquía*, lib. ii. cap. xlviii. p. 160 (of vol. i.).

tecós, who promised to assist their neighbors should they be assailed.¹ The latter, well aware of the consequences of their refusal, allied themselves at once with the Totonacos of Cempohual, and Quiahuitztlan or Chiahuitztlan; but the Mexicans, Tezcucans, and Tlacopans were too swift for them. By moving their warriors to the south of Popoca-tepetl they not only struck the most direct trail towards Orizaba, but also placed the tribes of Huexotzinco, Quauhquechollan, and Cholula, all independent and more or less at war with the Tlaxcaltecos, between the latter and their own war-party. The coast people were taken by surprise, and a fearful devastation of the country began, which terminated in its submission to the Valley Confederates. It appears that the Tlaxcaltecos either failed to fulfil their promise of assistance, or came too late; at all events their warriors did not participate in the conflict,² but having perceived that, by overpowering the tribe

¹ The attack, or rather the provocation to an attack, upon the tribe of Orizaba by the Mexicans and their allies is one of the most important events of aboriginal history in Mexico. It fully explains the wars between Mexico and the valley on one side, and Tlaxcallan and the plain of Puebla on the other side. The general belief has been that these continuous wars were the result of a formal agreement among the allies; that they were carried on at stated intervals and for religious objects. They have been gravely termed the "Holy War,"—*Guerra Sagrada*. It appears to have been overlooked that even those authors who are most responsible for the strange idea of regular expeditions for the purpose of securing captives, all place the beginning of these combats *after* the successful forays of the Mexicans and their allies upon Orizaba, which forays completely isolated Tlaxcallan. I refer to Ixtlilxochitl, *Histoire des Chichimèques*, etc., vol. i. cap. xli. p. 292, —to be compared with cap. xl.; Torquemada, vol. i. lib. ii. cap. xlix. pp. 160–162, *Monarchia*, etc.; but the latter, in lib. ii. cap. lxx. pp. 197, 199, gives such a clear, sensible, and therefore credible statement of the true cause of the wars in question, that it completely dispels the notions of the "conventional" fights which have been so commonly believed. That chapter should be copied entire; but as it is too long for this volume I very earnestly refer the student to it. Furthermore, when the Spaniards began to treat with the Tlaxcaltecos the latter did not mention the "Holy War," but complained that they were held surrounded, and kept out of salt, cotton, and other necessities of life. Cortés, *Carta Segunda*, p. 18.

² Tezozomoc, *Crónica*, etc., cap. xxxi., xxxii. p. 331. Torquemada, *Mon-*

of Orizaba and the Totonacos, the Mexicans held their own territory completely surrounded, they secretly instigated the former to revolt. Yielding to these counsels and renewed assurances of aid, the Orizabans and their associates smothered the confederate tribute-gatherers with the smoke of red pepper (*chile*), and killed the Mexican traders.¹ The revenge which the confederates of the valley took was prompt and bitter, and ever thereafter the Totonacos especially were treated with particular severity. Their complaints about it to Cortés furnish an idea of the hardships to which they had to submit at the hands of their vindictive and fierce conquerors.² Orizaba itself must have suffered terribly during these wars, for it never afterwards appears with any degree of prominence.

I have dwelt at some length on these occurrences, for the reason that they forcibly illustrate the condition of affairs in Mexico in the century previous to the advent of Cortés. The fact that the Valley Confederates could freely sweep around the range of their most powerful enemy, crushing one tribe after another in detail, and finally isolating completely the tribe of Tlaxcallan, shows how loose intertribal relations were, *and how distant yet were the conceptions of a state or of a nation among the aborigines of Mexico.* That even the Mexicans them-

archia, etc., lib. ii. cap. xlix. p. 162, mentions a combined attack of the warriors of Tlaxcallan, Huexotzinco, and Cholula upon the rear of the Mexicans. But the specifically Mexican sources do not speak of it; and they would not have failed to do so, since, as the result showed, such an attack would have redounded to the honor of Mexican prowess.

¹ Durán, *Historia*, etc., vol. i. cap. xxiv. pp. 200, 201. Tezozomoc, *Crónica*, cap. xxxiv. p. 344. This mode of smothering with *chile* is represented in the large paintings of Cuauhtlancingo, of which I shall hereafter speak. The aboriginal houses having no windows, it was easy to stifle any one within by closing the door, after having built a large fire, with red pepper in abundance on it, inside.

² Compare Tezozomoc, *Crónica*, etc., cap. xxxv. p. 347, with Cortés, *Carta Segunda*, p. 13, and Bernal Diez, *Historia verdadera*, etc., cap. xli. p. 36, cap. xlii. pp. 40, 41.

selves had no thought or knowledge of unification or consolidation, — this I believe that I have elsewhere proved, basing my conclusions principally upon the events of the Conquest, when Cortés availed himself of the same disconnected tribal society which the Mexicans had overrun, leaving it untouched in its fundamental arrangement, as the most dangerous weapon against them in the hands of an intelligent aggressor.¹



FIGURE I.

Orizaba is not devoid of ancient relics. Besides those mentioned by Dupaix and Bancroft,² I would call attention to the relief represented in the accompanying figure, which is a copy of a drawing of which a photograph was given to me by my friend Chavero. The relief which it represents stood, in 1865, in a wall of the tannery of Tepatlaxco in Orizaba. The stone is 1.41 metres (4 feet 8 inches) high, and 0.54 metres (about 21 inches) broad.

While at Tehuacan, in the State of Puebla, I met Indians from Orizaba. They speak the Nahuatl, but with a more guttural sound than usual, and they appear slow of speech. In view of the actual degeneracy of the Nahuatl idiom, the question suggests itself whether this peculiarity of sound in the utterance of Indians who live more secluded than the glib tongued aborigines of the plains of Puebla, with their soft labial and lingual pronunciation, is not perhaps the result of a purer preservation of

¹ *Art of War and Mode of Warfare*; also, *Social Organization and Mode of Government of the Ancient Mexicans*.

² *Native Races*, etc., vol. iv. pp. 435, 436.

the language on the part of the former.¹ The Indians of the mountains about Orizaba—not those seen in or about the city so much as those living outside of it—show two peculiarities, shared by them in common with other Nahuatl pueblos of the Sierra de Zongolica.² One is the wearing of long sidelocks, *melenas*, corresponding exactly to the *melots* of the New-Mexican “Pueblos,” and declared by the latter to be a peculiar token of their being sedentary Indians.³ The other is the *tzoh-mitl*,⁴ an earthbrown sarape, often fastened around the waist by a girdle or cincture. It is of a coarse thick wool, very appropriate to the high altitudes in which its wearers commonly live.

From Orizaba the ascent by the road increases in steepness, and the scenery grows correspondingly wilder. The graceful palms gradually disappear, and beyond Maltrata the rise becomes extremely rapid. We are left in doubt as to what should be most admired,—the sublime grandeur of Nature, or the remarkable efforts of man to improve every chance, every inch almost, for establishing safe rapid transit. As the road winds up from the valley of Maltrata in daring curves, along precipices the very thought of which might turn weak heads, we forget the depth of the chasm, the proximity of the brink, because everywhere tropical vegetation has secured a foothold, gracing a dangerous ledge with radiant blossoms, softening dizzy slopes with a mellow

¹ There is a striking difference between the pronunciation of the Indians of Orizaba and those of Puebla and vicinity. The former speak in a more infantile manner.

² The Sierra de Zongolica extends south of the volcano of Orizaba until near Tehuacan.

³ *Melena* is an old Spanish word signifying about the same as “sidelocks.” It is singular that the Pueblos of New Mexico and the Indians of Mexico should have the same characteristic “cut” of hair. It is met with, however, only among the remoter Pueblos of the Sierra.

⁴ The word is not in the vocabularies. I give it as I heard it spoken.

tint of green. If the same heights were bare, they would be awful ; here they are only bewitching. As we look down to a constantly increasing depth, the green valleys contract, and the village-plats dwindle to miniature ground-plans, — finally to mere spots. We pass through tunnel after tunnel, until at last Boca del Monte is reached ; the air blows cool, even chilly ; dark pines cover the mountain-sides ; and on our right, towers, in close proximity, the summit of the volcano of Orizaba.

Less than nine hours of travel have carried us through three zones, representing a vertical stratum of 2,500 metres (8,300 feet), but with a horizontal basis of less than 80 kilometres (50 miles English). Along this route, we have passed through a series of changes, in vegetation and climate, of the most striking character. These changes, and consequent contrasts, are characteristic of Central Mexico, and they have exercised a powerful influence on mankind. To overcome them, certain advances in knowledge, a certain progress in mechanical arts, are absolutely needed ; otherwise the groups of settlers, established in favorable positions, remain secluded from each other, and each group tends to form local types which, in course of time, may exhibit great changes from the original features. This may take place as well in language as in physical constitution ; and in treating of the linguistics or craniology of Mexico this fact should never be lost sight of.

The Tierra Fria, or "cold region," through which the road passes after leaving Boca del Monte becomes, in the vicinity of Esperanza, a cold, rather barren looking highland, without any of the wildly picturesque scenery of the lower mountains ; but the change is so sudden that its very bleakness, — with enormous prickly pears, dwarfish and ill-shapen palms, and tall *maguay* plants as types of vegetation, and

the gigantic pyramid of Orizaba towering in full view to the East, — has the effect of a successfully performed change in theatrical scenery. However remarkable and strange the appearance of this region is at first sight, it grows very monotonous as it becomes familiar. The air is cold, especially at daybreak, when clouds of mist rise from the lower fields and roll up to the summit of the volcano, there to be dispelled by the rising sun. It is particularly cheerless and dismal if, later in the day, clouds settle on the high tops and gradually sink until the lower slopes alone are visible, while an icy wind from the East drives the shivering stranger into the comfortable rooms of Mr. Pierre Maurel's station hotel. We instinctively feel that this high plateau is ill fitted for the abode of man, and are not surprised to learn that the remains of aboriginal occupation are not numerous. The gentlemen whom I consulted informed me that there were some *tlalteles* or *teteles*, — little mounds of stone supposed to mark burial places,¹ — in the hills around Esperanza, and that on a high eminence about 7 kilometres (4 miles) southeast of the station the remains of "fortifications" are still visible. I must here remark that terms derived from a more advanced kind of architecture, while, of course, commonly used by natives as well as by foreigners for the description of ruins, should always be accepted as comparative only, and never as absolutely descriptive.

The Indian population, which is of the Nahuatl stock, scatters itself around the peak of Orizaba very much as the valleys radiating from that central eminence expand in their downward course.² It is scanty near Esperanza. There are

¹ These *teteles* are well described by Professor Gumesindo Mendoza, "Idolo Azteca de Tipo Chino," in *Anales del Museo Nacional de México*, vol. i. pp. 39, 40. Those *teteles* which I saw, near Atlixco, were of stone, — in fact rude stone-heaps; but they may have become shapeless through decay.

² Orozco y Berra *Geografía*, etc., p. 211.

some pueblos which, like San Andrés Chalchicomula, are very thriving. The large *haciendas*, however, are exclusively in the hands of Creoles, Spaniards, or French settlers, and the influence exercised by the "Hacendados," in a quiet, seemingly unobtrusive manner, is of great moment.

The houses of the aborigines are of the same shape as those of the coast, — rectangular, with roofs at a high pitch, — but the material of which they are built is changed to suit the climate. The walls are frequently of adobe or stone, and the roofs, instead of being of thatch or palm-leaves, are made of boards (similar to our common clap-boards,) fastened with two wooden nails. The same kind of roof I noticed, subsequently, on a few houses east of the great volcano of Mexico, Popoca-tepetl, and particularly in the territory of the former tribe of Chalco, on the western declivity of the same mountain.

In the months of June and July the desert landscape of this plateau becomes, not enlivened, but, so to say, broken up, by the appearance of the high stalks of the flowering *magacy*, or *agave*. These stalks, surmounted by a whorl of dull-colored blossoms, are visible at a great distance.

After traversing a country very similar to the surroundings of Esperanza, a downward grade is struck beyond San Marcos, and the insensible decline to the central basin of Mexico begins. It is very gradual, and the changes in vegetation appear only in the frequency of the *magacy* as a "culture plant," and in the occasional presence of the *copal-quahuatl*, *pirú*, or gum-tree.¹ More and more the Malinche becomes prominent above the surrounding landscape. This isolated peak, in the recesses of whose summit snow remains at all seasons of the year, although unseen from the base, rises according to Almazan 4,107 metres (13,470 feet English) above

¹ *Schinus molle*.

sea-level.¹ It was long the object of superstitious worship by the aborigines living at its base,² and was claimed and held by the tribe of Tlaxcallan.³ The home of the Tlaxcaltecos, whose territory we enter near Huamantla, lies about 25 kilometres (16 miles) W.N.W. of the Malinche. Tlaxcala itself is at present in a deep valley, surrounded by bald ridges, the old pueblo extending to some of their slopes. Tlaxcala has occupied in history a very conspicuous place. Owing to a misconception of aboriginal institutions it has been palmed off as a kind of Mexican Switzerland, as a free republic in the midst of despotically ruled communities. Such was not the case. There was not the slightest fundamental difference between the social organization and mode of government of the Tlaxcaltecos and that of the Mexican tribe;⁴ but the exceptional geographical position of the latter, and the natural barrenness of their land,⁵ led them to seek means of subsistence from abroad. The confederacy of tribes grew out of tribal organi-

¹ Map of the State of Puebla. It is the only statement of the altitude of the Malinche which I have found. How far it is reliable I am not able to say.

² Torquemada, *Monarchia*, etc., lib. iii. cap. xvi. p. 276.

³ But not exclusively. Neither was it, as has been supposed, their main place of refuge. The distance is too great, and the ground intervening unfavorable for defence. It was the ridge, or ridges, above Tlaxcala, upon which the Indians retired for safety.

⁴ The Tlaxcaltecos were organized in four localized *phratries*, like the Mexicans. Two elective chiefs,—that is, elective in regard to the individual, but with heredity of office in a certain *gens*,—formed the nominal head of the tribe. The true directive power, however, lay in the Council of the tribe. The tribe of Mexico had a similar organization. What created an apparent dissimilarity was the Confederacy of the Valley-tribes, with its chief-captain always taken from the Mexicans. As, in the single tribe, the war-chief office was hereditary in the *gens*, so, in the confederacy, the same office became hereditary in the *tribe*.

⁵ The Mexican tribe was limited to a small area of cultivable land. It was, therefore, comparatively destitute of the means of subsistence. The Tlaxcaltecos, on the other hand, controlled a veritable "bread-country," as the name implies. In the course of less than two hundred years the rôles were changed, through the murderous activity of the former and the lack of energy of the latter.

zation, and the greater ability of the inhabitants of the Central Valley gave to their confederacy a power of aggression superior to that of any other aboriginal cluster in the same country.¹ The Valley tribes, of course, assailed the Tlaxcaltecos, and the latter withstood their attacks; but it is an utter mistake to look, for a parallel of these wars, to the campaigns of Xerxes against the Greeks, or to those of Charles of Burgundy against the Swiss. In order to understand them, a study of the conquests, or rather devastations, by the Iroquois in the seventeenth century, will furnish the best material.² The Tlaxcaltecos were as much the equals of the Mexicans, in savage craft, cunning, and ferocity, as were the Hurons and Andastes of the Iroquois; but while the Mexicans, like the Iroquois, looked to strengthening their confederacy as the means of increase in power, and consequent security of subsistence,³ the Tlaxcaltecos remained stationary in tribal isolation, although the material for a most powerful confederacy lay within their easy reach.⁴ Their territory, at the outlets

¹ There is no intimation of any other confederacy of tribes in Mexico, of a permanent character, except, perhaps, among the Totonacos. It is true that we know little about Michhuacan as yet. Tlaxcala never rose to the thought of a confederacy of the valley of Puebla, in opposition to that of the valley of Mexico.

² Lewis H. Morgan, *League of the Iroquois*, book i. pp. 8-14. It is not without a deep feeling of gratitude, as well as of affection, that I quote this work. Those who know of my relations to its recently deceased author can realize what I feel, at this time, in citing the earliest work of one so dear to me. Francis Parkman, (*The Jesuits in North America in the Seventeenth Century*, 3d edition, 1868, cap. xxiii. pp. 336-348; cap. xxxiii. pp. 434-445), has sketched in an inimitable manner the unstable character of the so-called conquests of the Iroquois; and if, in the writings of my beloved teacher and paternal friend Morgan, I found the basis for understanding the organization and mode of life of the Mexicans, it is in the works of Mr. Parkman, to whom personally I have become not less attached, that I found the natural parallelism between the forays of the Iroquois and the so-called conquests of the Mexican confederacy.

³ W. H. Prescott, *History of the Conquest of Mexico*, 1869, book i. cap. i. pp. 18-20.

⁴ An alliance between Tlaxcallan, Huexotzinco, Cholula, and Atlixco would

of its narrow longitudinal valleys, spread into fertile fields ; their mountain ridges afforded safe retreats. On their own ground, thoroughly known to them, the Tlaxcaltecos of course proved most successful, but they took no steps indicating any forecast whatever. Thus they failed to confederate permanently with the tribes of Cholula and Huexotzinco,¹ and showed unpardonable indifference toward the inhabitants of the gulf-coast.² Had not the Spaniards arrived in the very "nick of time," there is no doubt but that the Tlaxcaltecos would have fallen a prey, and deservedly too, to the Valley Confederates of Mexico.

The route which Cortés followed on his march towards Tlaxcallan must be intersected by the railroad somewhere near the station of Huamantla, if, as the reports of the conquerors indicate, they passed by the pueblo of Jalacingo (Xalatzinco) in the State of Vera Cruz.³ At least, that would be the nearest and most convenient route. Vestiges of the famous wall should therefore be looked for to the west or northwest of the Cofre de Perote. As yet, however, these are mere surmises. But the existence of this wall is not a subject for doubt ; nor is it an exceptional structure in Mexico. Similar constructions are reported as existing in the seventeenth century in the country of the Mixtecos of the State of Oaxaca,⁴ and I have myself found in that State, near

have been a league between self-supporting tribes, — which was not the case in the valley proper ; but it seems as if the very fact that each one had enough to live upon was one of the reasons why they remained isolated.

¹ There are indications that temporary alliances were formed ; Torquemada *Monarchia*, etc., lib. ii. cap. xlix. pp. 161, 162 ; but they were mostly between Huexotzinco and Cholula or Atlixco. Durán, *Historia*, etc., vol. i. cap. lvii. pp. 450-452 ; cap. lviii. pp. 462, 463. Tezozomoc, *Crónica*, etc., cap. xci. pp. 610, 611.

² Durán, *Historia*, etc., cap. xxi. pp. 181-185 ; cap. xxiv. p. 203. Tezozomoc, *Crónica*, etc., cap. xxxi. p. 326 ; cap. xxxiv. p. 343 ; cap. xxxv. p. 347.

³ Bernal Diez, *Historia verdadera*, etc., cap. lxii. p. 65.

⁴ Fray Francisco de Burgoa, *Geográfica Descripción de la Parte Septentrional*

what is called the Pueblo Viejo, or "old village," of Tlacolula, dry-stone barricades¹ closing gaps between steep hills.

Huamantla lies on a high plain along the northern base of the Malinche. As viewed from it, the summit of that mountain appears, in all its ruggedness, like a cluster of picturesque crags. The true aboriginal name for the Malinche is "Matlal-cueitl,"² — the word Malinche being a corruption of *Malintzin*, the Nahuatl pronunciation for *Marina* (the *r* being changed to *l*), with the diminutive, *tsin*, equivalent to the Spanish *ito*, as an endearing particle affixed.³

Beyond Huamantla the traveller is treated to a change in scenery again, and one of very peculiar nature. Two remarkable sights burst into view almost simultaneously; the two great volcanic peaks of Mexico, looming up behind the bleak ridges of Tlaxcala like immense monuments; and the extensive fields of maguey, or *pulque* plant, which cover the ground very nearly to the valley proper.

del Polo Arctico de la America, y Nueva Iglesia de las Indias Occidentales, y Sitio Astronómico de esta Provincia de Predicadores de Antequera, Valle de Oaxaca. Mexico, 1674; Parte Segunda, cap. xxiii. p. 128: "y regastados de sus victorias, y multiplicándose en su descendencia, se estendían á las Serranías vezinas formando murallas por los passos mas sospechosos que podia entrarles el enemigo, el dia de oy está un cerro que coge mas de una legua de piedra, y lodo seguida por los altos, y vagios de los montes, y quebrados, que admira á los que la vén, y que despues de tantos siglos de la gentilidad persevera."

¹ Not only there, but at the place called Jio, or Fuerte, near Mitla; but the walls are more remarkable at the Pueblo Viejo, since there they close gaps, and impede, not an ascent to, but a descent upon, the former village. We have no recent report concerning the wall of the Tlaxcaltecos, and therefore do not know whether it was dry-stone or not. The expression "cal y canto" is not decisive.

² *Matlalcueye*, according to some authors.

³ The particle *tsin* (not to be confounded with the plural *tin*) has been regarded as a "reverencial." I have become satisfied that it is a diminutive only, and that it perfectly corresponds to the Spanish *ito*. Thus "totatzin" = *padrecito*; "tenantzin" = *madrecita*. *Tlaxcallan*, and its diminutive *Tlaxcallantsinco* = "the place of little Tlaxcallan." *Tula* and *Tulantzinco*, *Tezcoco*, and *Tezcocingo*, etc. There is a vast difference between such an affectionate, familiar addition and a "reverencial particle."

The appearance of the two volcanoes of Mexico is more striking than that of Orizaba. The most northerly, or Yztac-cihuatl, or Yztac-tepetl, commonly called the Sierra Nevada,¹ presents a serrated ridge covered with perpetual snow, and resting on a broad platform which very gradually descends into dark forests. The height of its northern summit is given by García-Cubas at 4,775 metres (15,662 feet). The Popoca-tepetl,² commonly called El Volcán, lies south of the former, and therefore at a greater distance from the railroad. It appears as a perfect cone, slightly truncated, or rather with a cup-shaped summit. This concavity is the line of the crater, here visible lengthwise; whereas from Puebla (whence Plate IX. is taken) it disappears, the top of the mountain rising above it to a sharp point. The height of the volcano has been determined by Miguel M. Ponce de Leon, trigonometrically, at 5,391 metres (17,682 feet); it thus appears to be the highest point of Mexico.³ Its slopes, of a dark gray below the irregular and constantly changing snow-line,⁴ are much more denuded than

¹ The name *Yztac-cihuatl* signifies "white woman," and has its origin on the west side of the volcanoes. There, from Amecameca for instance, the great mountain appears strikingly like a female lying on her back with a white shroud thrown over her. From the side of Puebla, the name *Yztac-tepetl*—"white mountain"—prevails. As such it is mentioned by Gabriel de Rojas, *Relacion de Cholula*, MS. of 1581, belonging to Señor D. J. García-Icazbalceta. The word Sierra Nevada—"snow-covered saw" (from *sierra*—"saw"), and is exceedingly characteristic. (Plate IV.)

² "Smoke-mountain."

³ Brantz-Mayer, *Mexico as it Was and as it Is*, p. 215, gives the following measurements of its height:

Berbeck, 10th Nov., 1837, 5,443 metres = 17,852 feet English.

Glennie, 20th April, 1837, 5,451 " = 17,883 " "

W. Bullock (*Six Months' Residence and Travels in Mexico*, 1824, p. 444), gives the height at 17,875 feet. The mean of Dollfus's measurements, in 1865, is 5,423 metres (17,787 feet English); *Geogr. Mittheilungen*, 1868, p. 98.

⁴ It is hardly possible to establish a regular line of perpetual snow on the great volcano. I have seen, in the months of February, March, and April, the

those of the Yztac-cihuatl. The two summits are connected by an apparently wooded ridge, which presents itself like a deep gap, notwithstanding its mean altitude of 3,000 metres (about 10,000 feet),¹ so that they shoot up in bold relief like perfectly isolated masses. Their bases are hidden by the lower mountains extending northward from the Yztac-cihuatl;² and the railroad rounds the outer spur of these ranges, in order to descend into the valley of Mexico from the northeast. We therefore see the volcanoes, in the course of six hours, successively from the east, northeast, north, and finally, upon reaching the city of Mexico, from the northwest.

Upon leaving the State of Tlaxcala we enter the plains of Apam, or Apan, in the State of Hidalgo, famous for being the home, *par excellence*, of that variety of the maguey, or *Agave Americana*, which produces the best *pulque fresco*, in contradistinction to the *pulque caliente*, a coarse, ill-flavored beverage.

Pulque is strictly an aboriginal beverage, an Indian drink, and the art of its production antedates the Conquest; but the word itself, like the word *maguey*, does not belong to the Nahuatl language. It is written *pulcre* by Father Bernardino Ribeira (better known as Fray Bernardino de Sahagun);³

southern slope almost completely free. On the other hand, severe storms occasionally whiten it in the summer months to a very low altitude. This is not so much the effect of snow as of sleet and hail. At all events, the volcano is whiter in summer than in winter, owing to the absence of precipitation during the latter season. Therefore the proverbial verses :—

“ Antes del día de San Juan, bajan las aguas del Volcán ;

Despues del día de San Juan, suben al Volcán.”

¹ Some of the elevated ridges, like the Cerro Gordo and Cerro de Tlamacaz, are evidently higher.

² The Sierra de Tlaloc, famed as a place of aboriginal worship, forms a part of these lower spurs.

³ The true name of this celebrated teacher and historian of the Indians of Mexico was Bernardino Ribeira. He was a native of the village of Sahagun, in the kingdom of Leon, Spain. Alfredo Chavero, *Sahagun*, Mexico, 1877, p. 7.

but this does not afford any clew to the origin of the name. The Nahuatl term for the maguey is *metl*; ¹ and for pulque (or fermented liquor, wine, in general), *octli*.² From the fact that the venerable Father above mentioned uses the term *pulcre* freely, we may infer that it came into use at an early date, soon after the Conquest; and was not therefore, as the Abbate Clavigero states, an importation from one of the languages of Chile,³ but rather one of the many words like *cui*, *macana*, etc., which the Spaniards introduced and grafted into the aboriginal idioms of the mainland, taking them from the Arua tongue of Hayti.⁴ It is also doubtful whether the word *tlachique*, used by Sahagun for an aboriginal fermented beverage, is not also an importation from the same source.⁵

I shall, of course, continue mentioning him by the name under which he has become historical.

¹ Alonzo de Molina, *Vocabulario en lengua Castellana y Mexicana*, 1571; part ii. p. 55.

² *Id.*, ii. p. 75. The term *pulque*, or *pulcre*, is not met with in this valuable dictionary.

³ *Storia di Messico*, vol. ii. pp. 221, 222.

⁴ At the close of the fourth and last volume of Oviedo, *Historia General*, etc., there is a catalogue of American words used by Oviedo, — “Voces Americanas empleadas por Oviedo.” It says of *pulque*, p. 604, “Lengua de Nueva-España.” The fact that Oviedo mentions the word militates against the assumption that it came from Chile; but is not a proof that it belongs to Mexico. None of the older authors mention it. One of the most circumstantial of these, in his description of the maguey and its uses, is Motolinía, *Historia de los Indios de Nueva-España*, trat. iii. cap. xix. pp. 243–246. He does not use the word *pulque*, but freely speaks of *vino*. Gabriel de Rojas (*Relacion de Cholula*, MS., 1581) uses the name, however. Gómara (*Segunda Parte de la Crónica*, etc., Vedia, i. p. 441), while clearly describing pulque, does not give it any name beyond that of *vino*. Alonzo Zuazo, (*Carta al Padre Fray Luis de Figueroa*, etc., 14th Nov., 1521, in Icazbalceta, *Col. de Docs.*, vol. i. p. 361), speaks of “miel de maguey.” It is very difficult to reach a conclusion in regard to the origin of the word, and I am far from giving my opinion for anything else than a suggestion.

⁵ The word is also pronounced *tlachicha*, or simply *chicha*. The latter word is given in the vocabulary appended to Oviedo (*Historia General*, etc., vol. iv. p. 598) as from the language of Cuba. I have tasted a kind of *chicha* which is truly excellent, being made of barley, sugar, and slices of pine-apple, which

There are a great many varieties of pulque; but they simply denote peculiar flavoring ingredients, and not any difference in the manner of making. Since the Conquest, the Indians having become acquainted also with the art of distillation, the flower-stalks of a smaller species of maguey have been used for producing the *mezcal*.¹ The soft internal parts of a beautiful, brocoli-like agave — which grows profusely in the States of Jalisco and Guanajuato, but is also found in Oaxaca — are washed and distilled, and a perfectly limpid, colorless liquor thus secured, which bears a strong resemblance in taste to the Swiss *Kirschwasser*.

But besides its use for the production of strong beverages, the maguey plant is employed also for the manufacture of textile fabrics. The plains of Apam grow the *ixtli*, of which a kind of tissue was prepared, even before the Conquest, which was a valuable substitute for cotton cloth, and more extensively used than the latter.²

It is a curious spectacle to see the maguey extending in

have fermented for a number of days. The fact that barley is used indicates that this kind of *chicha* is of modern origin.

¹ The *mezcal* also has numerous flavored varieties. There is a great difference between what is called *mezcal* among the wild Indians of the Southwestern United States, and the colorless *mezcal* or *vino de tequila* of actual Mexico. The former is a boiled and fermented liquor, the latter a product of the still. But it appears that the Mexicans, previous to the Conquest, prepared a *mezcal* similar to that used by the Comanches, by boiling the juice of the maguey. See Motolinía, *Historia de los Indios*, etc., trat. iii. cap. xix. p. 244; Oviedo, *Historia General*, etc., vol. i. lib. xi. cap. xi. p. 384. The latter even speaks of a distillation.

² Motolinía, *Historia*, etc., p. 244: "Sacan tambien de él vestido y calzado; . . . y hacen mantas y capas; todo de este metl ó maguey." Sahagun, *Historia General*, etc., vol. iii. lib. x. cap. xx. pp. 48, 49. Durán, *Historia*, etc., vol. i. cap. xxvi. p. 215: "Toda la demas gente, so pena de la vida, salió determinado que nenguno usase de algodón ni se pusiese otras mantas sino de nequen." My friend, Dr. Phil. J. J. Valentini, has, in one of his admirable monographs, shown the part which the washed fibre of the agave played in the preparation of Mexican paper. "Mexican Paper," in *Proceedings of the American Antiquarian Society*, Oct. 21, 1880, pp. 69-73.

endless rows up denuded slopes and down broad valleys, in the midst of, or hedging in, fields of wheat or barley. This is the aspect of the Llanos de Apam. The distant hills or mountains appear almost barren; no watercourses trickle through the otherwise fertile soil, for water in the shape of brooks and rivers is, on the whole, the great desideratum of Mexico. The extensive buildings of large haciendas loom up at intervals like small villages; pueblos conceal themselves beneath groves of copal trees, and among hedges of columnar cacti, intermingled with the broad-leaved *nopal*, or prickly pear.¹ The ground is thoroughly occupied, or rather owned; but it is owned by few, and is but slowly improved by them.

The line of retreat taken by Cortés after his disastrous sally from Mexico on the 1st of July, 1520, known as the *Noche Triste*,² is said to have been across the plains of Apam. There is a tradition that at the Barranca del Muerto, a shallow creek-bed between Apizaco and Otumba, the principal engagement was fought between the Spaniards and the Indians, before the escape of the former into the country of Tlaxcallan. It is evident that the Mexicans selected a very bad place for the engagement, for it is a perfectly level plain; but it is also evident that they could not have pursued Cortés much further without exposing themselves to attack from the mountain tribes.

After rounding the most northerly spur of the mountains near Ometusco, Otumba (Otompan) is reached, or rather the station La Palma, where passengers for the latter place descend. The last scene of the great "running fight," begin-

¹ The fruits of these *opuntia* are not only very palatable but also very wholesome.

² The description of the country through which they retreated is remarkably plain and effective. Compare Cortés, *Carta Segunda*, pp. 45, 46; Bernal Diez, *Historia Verdadera*, etc., cap. cxxviii. pp. 137, 138, — particularly the former.

ning at Mexico on the 1st of July, 1520, and closing (if tradition may be trusted) at the Barranca del Muerto, seven days afterwards, has been distorted and magnified into the "great battle of Otumba."¹ Neither the locality nor the character of the event justify such a title. It was evidently the last ambush prepared by the Indians for Cortés, — not in accordance with a general military plan, but simply by the inhabitants of the pueblos, which he approached successively, meeting him in arms whenever they were not afraid of his still dreaded weapons.² I endeavored some time since, in another place, to reduce the "battle of Otumba" to its true proportions; namely,³ from the size of an engagement like that of the Granicus or even Arbela, to that of General Custer's unfortunate encounter with the Sioux; and I have found no cause for change of opinion, after seeing the locality several times. The result of the fight, favorable to Cortés, always remains highly creditable to his bravery and to that of his men. The episode about the bearer of a token being struck down, and his fall deciding the fight, is completely in accordance with Indian modes of warfare.⁴ Cortés fought himself out of destruction; at later periods, various other officers, not less brave, and under other circumstances perhaps equally skilful, have fought themselves into it.⁵ But

¹ Bernal Diez, *Historia*, etc., cap. cxxviii. pp. 136, 137. It is interesting to compare this author's pompous tales with the plain, matter-of-fact report of Cortés, *Carta Segunda*, pp. 45 46.

² Cortés, *Carta Segunda*, p. 45.

³ *Art of War and Mode of Warfare*, p. 155 and Note 204. I instance the fight that proved fatal to General Custer, which, in respect of the numbers engaged, probably will bear good comparison with that of the soldiers of Cortés and the Indians whom they repulsed.

⁴ The fall of a war captain, or chief, often determines the result of an engagement.

⁵ The Spaniards had no artillery left; so that it became, for a short time, a hand-to-hand encounter. It was, at all events, one of the worst straits in which the conquerors ever were placed, though far from as bad as the *Noche Triste*.

the fight in the plains of Apam is but a sample of aboriginal warfare in every part of the continent.¹

While the present inhabitants of the region of Otumba belong to Nahuatl stock, it is not unreasonable to suggest that at some previous time this district may have been largely peopled by Otomites. The word Otompan itself seems to indicate it.² Although the Otomi are a relatively widely scattered linguistical stock, we know in fact very little of them. Their language has been studied to some extent;³ but their true position in the ethnography of Mexico, their past history and relations towards other tribes, are almost totally unknown. While they are frequently regarded as a people of low standard by older writers, we should not forget that one of the titles given by the Mexicans to their meritorious braves was that of Otomite. The meaning of this name I have given elsewhere as "wandering arrow."⁴ This was certainly not the name which the tribe claimed for itself. They are said to have called their language "Iiā-hiū,"⁵ with a nasal inflection. We must not forget that

¹ Compare the skirmishes with the Tlaxcaltecos, the fights of Montejo with the Maya Indians of Yucatan, the engagements on the plateau of Ecuador between Benalcazar and the Peruvians, the first campaigns of Valdivia against the Araucans, with our Northern Indian warfare from the time of the earliest settlements down to the present year.

² Signifying "place of the Otomí." Motolinía, *Historia*, etc., p. 9: "y las provincias de Tollan y Otompa casi todas son de ellos." Torquemada (*Monarchia*, etc., lib. ii. cap. xxxix. p. 144), besides identifying the Otomies with the Chichimecas ("que eran de Chichimecas, que son los que ahora llaman Otomies"), mentions both as inhabitants of Otompa (lib. ii. cap. vi. p. 86). These are but two quotations on the subject, but more are not needed, as the fact is generally admitted.

³ There are several grammars and vocabularies extant, though not a single recent one.

⁴ *Art of War and Mode of Warfare*, p. 117 and note 86. This meaning has been accepted by Dr. A. Bastian, *Die Culturlander des Alten Amerika*, vol. ii. p. 680, note 1.

⁵ Fray Manuel Crisostomo Naxera, *Disertacion sobre la Lengua Othomi*, 1845, p. 3.

many of the names by which the aboriginal idioms of Mexico are now called, are not taken from those idioms themselves, but borrowed by the whites from the Nahuatl. Thus we are ignorant of the names by which the most important tribes of Mexico called themselves. Such names as Tzapoteco, Mixteco, Cuicateco, Chinanteco, Mazateco,"¹ and others are, like Otomi, originally Nahuatl, and not the proper native terms. In fact we have, in consequence of a misconception of the condition of aboriginal Mexico, viewed all features too exclusively from the standpoint of a single tribe, or linguistical group of tribes, — the Nahuatl.

This presence of the Mexican language, almost everywhere, as a disturbing element in the study of the aboriginal history of Mexico, is again exemplified in connection with the important ruins at San Juan Teotihuacan, which place the railroad passes beyond Otumba. While the name Teotihuacan is Nahuatl,² the confused traditions concerning the origin of the ruins ascribe them to an entirely different tribe.³ Only one remnant is left of another, older, aborigi-

¹ All these words are Nahuatl. *Tzapoteca*, "man who gathers *tzapotes*;" *Mixteco*, "dweller in foggy regions;" *Cuicateco*, "man of the place of songs;" *Chinanteco* "man who makes enclosures;" *Mazateco*, "man who carves deer." These are literal renderings; but the derivations become much more simple yet if we admit *tecatl* to be, in every case, but the gentile form of a local name, as Buschmann (*Aztekische Ortsnamen*, pp. 12, 15-18, 19, etc.) states. Whether *tecatl* has always that signification in tribal or personal names is yet very doubtful. The aboriginal title, *tlacatecatl*, "cutter of men," should not be forgotten.

² Sahagun (*Historia General*, etc., lib. x. cap. xxix. p. 141) says "Teutihuacan." Buschmann (*Aztekische Ortsnamen*, etc.) completely ignores this local name. Still, the word is so evidently composed of *teotl*, "god" (or rather contains this word so unquestionably), that we cannot fail to give it a Nahuatl origin.

³ That the Pyramids of Teotihuacan date from a period anterior to that of the Mexicans, or Nahuatl in general, results from the fact that no striking mention is made of them in connection with the specifically Mexican traditions. The place, in the two centuries which preceded the Conquest, does not play a part corresponding to the magnitude of its ruins. This shows that the edifices were already abandoned at the time of the Conquest. Besides, those authors who have been, so to say, the "inventors" of the Toltecs, ascribe the mounds

nal name for the place, in the statement that it was also called Tula, or Tuhlá, Tollan, Tollam, — and this name has been explained to signify “place of reeds,” or “place of the Toltecs.”¹ In both cases it is regarded as of Nahuatl origin; but no attention has been paid to the contingency that it might be derived from an entirely different idiom. Further on I shall allude to the surmise that the Maya term *tuloom*, *toloom*,² may be the origin of the widely scattered word *tula*, and consequently of the name Toltecs. The latter term would be derived, according to a Mexican vocabulary, from *tollin*, a species of reeds or canes (*tule*),³ and *tecatl*, “cutter” (from *nitla-tequi*, “to cut”);⁴ therefore “cutters of reeds or canes.”⁵ But the art of gathering reeds, and even of working them into the most useful and

of Teotihuacan very clearly to that tribe. Ixtlilxochitl, *Histoire des Chichimèques*, vol. i. cap. ii. p. 25; Torquemada, *Monarchia*, etc., lib. i. cap. xiv. p. 37. Not even the *Anales de Cuauhtitlan*, so far as published, make any mention of the place. *Anales del Museo Nacional*, vols. i. and ii.

¹ Buschmann (*Aztekische Ortsnamen*, p. 76) derives *Tollan* from *tolin*, “reed.” For “place of reeds” the word *tultitlan* is also used. Sahagun (*Historia General*, vol. i. lib. iii. cap. iv. p. 245, cap. viii. p. 252, cap. xii. p. 255; vol. iii. lib. x. cap. xxix. pp. 106, 108, 110, 113, 142) writes mostly *Tullan* and also *Tulla* (*hoy tula*). The *Anales de Cuauhtitlan* use the word *Tollan*; also Motolinía, *Historia de los Indios*, etc., p. 5. Juan de Tobar (*Relacion del Origen de los Indios que habitan esta Nueva España, segun sus Historias*, published as an anonymous work under the title of *Código Ramirez*, p. 24) says *Tula*: “Que quiere decir juncia ó espadaña.” Durán, (*Historia de las Yndias*, vol. ii. cap. lxxix. p. 75,) uses both *Tula* and *Tollan* on the same page. Torquemada variously uses *Tollan*, *Tula*, and *Tullan*. But the etymology, “place of reeds,” while it is undoubtedly correct to a certain extent, still lacks clearness in some respects. The etymology, “place of the Toltecs,” does not agree with the explanation given of the word *Toltecatl* as an “artisan,” or “skilful worker.” I shall refer to the point hereafter.

² In connection with it, I call attention to the fact that the *Relacion de Cholula* of Gabriel de Rojas (MS. 1581) writes *Tullam*, also *Tollam*.

³ Molina, *Vocabulario*, ii. p. 148.

⁴ *Id.* ii. p. 105.

⁵ I refer to the word *Tlaccatecatl*. Durán, *Historia de las Yndias*, vol. i. cap. xi. p. 102: “El segundo ditado era *Tlaccatecal* que se compone este ditado de *tlacatl*, ques persona y deste verbo *tequi*, ques cortar ó cercenar . . .”

pleasing shapes, is not of sufficient moment to warrant our giving to the word *Toltecatl* the current and proper signification of "a master of mechanical arts,"¹ as which it has passed into history. It appears more likely that the Maya word *tuloom*, *toloom*, indicating a stone structure, wall, or enclosure of durable make, taken by the Mexicans or Nahuatl tribes from their predecessors on this soil, and connected with the verb "to cut" ("to break," or "to shape"), may be the etymology. In that case the great mounds at San Juan Teotihuacan would be a work of the Maya.

The two great mounds, not altogether improperly called Pyramids, are seen very plainly and to full advantage from the railroad track. They are very conspicuous objects, and the highest of them is probably also the highest aboriginal structure in America, provided that it is all artificial. While passing by Teotihuacan several times, I lacked the disposition to pay it a cursory visit. The impression which the huge eminences (under the supposition, not yet proven, that they are largely if not exclusively artificial)² made upon my mind was, that an examination by detailed measurements of the whole valley in which they lie, including the mountain slopes, could alone give an accurate idea of the nature of these monuments. Such a study would have required more time than I could spare; and a brief visit, while it might result in some discovery of interest, would in the end only have proved deceptive. Nothing short of exhaustive, systematic research, necessarily limited to a small area at a time, or a wide, detailed survey, can secure proper scientific results. Isolated

¹ Molina, *Vocabulario*, ii. p. 148; *Relacion de Cholula*, MS. 1581; Sahagun, *Historia General*, etc., vol. iii. lib. x. cap. xxix. p. 107; and others.

² The point is, as stated, still in doubt. A very excellent and trustworthy observer, Dr. Palmer, is, as has been stated to me, of opinion that the mounds are natural eminences, shaped and graded artificially.

discoveries, while they should of course be most thankfully received and appreciated, have as yet only the value of geographical guide-posts, and of useful warnings against premature theorizing.

Near the little pueblo of Tepechpam the railroad strikes the shores of Lake Tezcoco, and enters the great central basin of Mexico. On the opposite beach the town of Tezcoco glistens along the placid waters of the lake, which reflects the white buildings in its liquid mirror. The sight is charming as it presents itself at sunset, with the Sierra de Tlaloc¹ wrapt in dark blue haze, and at the southeastern extremity of the pale-blue water-sheet the gigantic volcanoes looming up, blushing under the last kiss of the sun.

One of the many Indian paintings which Mr. Léon Aubin of Paris has secured and preserved during his long residence at Mexico, has been christened by him, "*Mappe de Tepechpam.*" We owe its popular reproduction to one of the most eminent archæologists of America, the highly gifted E. G. Squier.² It is one of those many paintings, manufactured after the Conquest, which combine the imperfections of aboriginal art with explanations in aboriginal language, reduced to writing, as taught by the Church. The chronicle which it purports to depict reaches as late as 1584. I shall have occasion to return to the *Mappe de Tepechpam* in the course of this report.

The Valley of Mexico, however beautiful it may appear under certain aspects of light, is in fact the remnant, not of a deep mountain-lake, but of an enormous marsh, formed by the accumulation, without natural outlet, of the waters collected on the tops and running down the slopes of the high ranges surrounding it. In the very centre of the Lake of

¹ The Sierra de Tlaloc, a low mountain ridge connected with the volcanoes, was famous as having been the site of a stone idol to which special reverence was paid.

² The copy is not colored, and this somewhat diminishes its value.

Tezcoco flat barges or scows sometimes are in danger of grounding. The soil, wherever rocks do not protrude, is deeply soaked with stagnant water, so that in the city itself every superficial digging becomes immediately filled with it. It is therefore useless to expect, as spontaneous growth, anything but a swamp vegetation; and the high eucalypti, growing in the villages and the city itself, are products of cultivation or embellishment since the Conquest, and not of Nature.¹ It is unjust and unhistorical to ascribe the present denudation of the valley to Spanish vandalism. From the time the central basin was first peopled, the life of its inhabitants was a struggle against the encroachments of mountain streams upon the solid ground of the valley. The Mexican tribe opposed a first barrier to them by constructing the famous dikes, and thus transforming the marsh into a huge pond.² Cortés found the space secured for permanent living too limited, and began filling up. The result of this was the expansion of swamp vegetation, natural to the character of the soil,³ under a climate which, while equable, is far from trop-

¹ This fact is very plain. Aside from the public parks in the city, the eucalyptus is found almost exclusively in pueblos only, and along roads. Besides, the tree is not properly indigenous. Humboldt (*Essai politique*, vol. ii. lib. iii. p. 54), while speaking of the shade-trees of the valleys, completely omits the eucalyptus, now so prominent among them.

² The first statement of this fact, although it had been foreshadowed already by Wilson, is due to Morgan, *Ancient Society*, part ii. cap. vii. pp. 190, 191.

³ There is no statement to the effect that the valley of Mexico was ever timbered. The timber grew, where it still grows, on the mountain slopes; and there it was of course thinned,—perhaps not so recklessly three hundred years ago as now in Mexico and in the United States. It is evident that when Cortés began filling up for building, the vegetation could not consist, on such patches of land as were thus formed, of anything else than low plants, which, previous to giving way to culture, certainly looked less prepossessing than the water-sheets formerly in existence. We must never forget that Chapultepec, Tacuba, Iztapalapan, Mixquic, Mexicaltzinco, Guadalupe, pueblos which now are inland, were then on the shore. The intervening space has been filled up meanwhile, not merely artificially but naturally, through the water from the surrounding heights filtering towards the lake basin. In regard to the change in vegetation, I refer to Bernal

ical. We must not forget that the city of Mexico, although in latitude $19^{\circ} 25' 45''$, according to Humboldt¹ lies 2,274 metres (7,459 English feet) above sea-level.² As early as 1553 the valley and city were threatened by a dangerous inundation.³ The same danger recurred in 1580, 1604, 1607, and 1629.⁴ It was only by means of the great canal of Huchuetoca, which was begun in 1634, and finally completed, after repeated and long interruptions, in 1789,⁵ that the valley became effectively and, so far, permanently drained.

The descriptions, furnished by eye-witnesses of the Conquest, of the beauty and fertility of the Mexican Valley need not surprise us. The effect from a distance, on a clear day, in the limpid and transparent sky of these altitudes, is enchanting. To the little band of Spaniards, travelling along

Diez (*Hist. verdadera*, etc., cap. lxxxvii. p. 83), who, speaking of Iztapalapan, says: "y diré que en aquella sazón era muy gran pueblo, y que estaba poblada la mitad en el agua; agora en esta sazón está todo seco, y súmbran donde solía ser laguna, y está de otra manera mudado, que si no le hubiera de antes visto, no lo dijera, que no era posible que aquello que estaba lleno de agua esté agora sembrado de maíces y muy perdido." It is clear that Diez speaks of the winter, when dry cornfields are never exactly picturesque, and the word *perdido* is not to be interpreted as "waste," but as "bad looking," "ugly," "homely,"—a very natural expression on the part of one who only looks to the scenic effect. Otherwise, the conversion of a swampy water-sheet into cornfields is not properly an act of laying waste on purpose, or of ruthless neglect.

The same author refers to the cutting of timber complained of by Humboldt. Bernal Diez says (cap. ccix. p. 311): "y han plantado sus tierras y heredades de todos los árboles y frutas que hemos traído de España, y venden el fruto que procede dello; y han puesto tantos árboles, que porque los duraznos no son buenos para la salud y los platanales les hacen mucha sombra, han cortado y cortan muchos, y lo ponen de membrilleros y manzanas, y perales, que los tienen en mas estima." This is not vandalism.

¹ *Essai politique*, etc., vol. i. p. 57.

² *Geographische Mittheilungen*, 1869, p. 230, by Guillemin.

³ *Essai politique*, etc., vol. ii. p. 99.

⁴ *Id.*, vol. ii. lib. iii. cap. viii. p. 99. Other inundations, thwarted by the channel of Huehuetoca, threatened in 1648, 1675, 1707, 1732, 1748, 1772, 1795. They appear to have been much more frequent since than before the Conquest.

⁵ *Id.*, vol. ii. pp. 117-119.

the lake-shore, by the side of the cultivated patches which the Indians had grouped around their pueblos, near the placid water, the first which they had seen since leaving the coast, the sight must have been charming. And when, through the filling up of the marsh, parts of it became transformed into sober cornfields, we need not wonder at the regret expressed by some respecting the change. It was the feeling which we ourselves experience at seeing the picturesque supplanted by the useful.

On this low, swampy ground, with rough slopes to our right, we swiftly proceed onward to the southwest. The summits of the volcanoes turn to an ashy hue, and finally disappear in the darkness of the night; but the sanctuary of Guadalupe Hidalgo blazes on the hills of Tepeyacac in gorgeous illumination. Half an hour more, and we land at the plain but spacious railroad station of the city of Mexico.

If, until now, I have not strictly limited myself to matters within the scope of my scientific task, it has been because such digressions were necessary for the understanding of the country in general, and its nature. The latter has trained and moulded its dwellers. Hereafter I shall refer to matters foreign to Archæology, only in so far as they strictly elucidate points of scientific import, and I shall pass unnoticed a number of things otherwise of great interest. I wish it distinctly understood that apparent deficiencies in this respect are not the result of neglect on my part, but of the necessity to limit myself, as strictly as possible, to the field of science which I was sent to cultivate.

PART II.

ARCHÆOLOGICAL NOTES ABOUT THE CITY OF MEXICO.

THE church of San Hipólito Martyr, about two blocks (*cuadras*) nearly west of the present Alameda of the city, bears a commemorative tablet erected by the municipality, with an inscription to the effect that on this spot occurred the greatest slaughter of the Spaniards, by the Indians, during the memorable retreat of Cortés, on the night of June 30 and July 1, 1520. Nearly two blocks further west is the "Salto de Alvarado," where Pedro de Alvarado made his famous leap, on the same night, over the sluice that cut the ancient dike leading to the main land at Tacuba. Comparing these data with the relations extant about the *Noche Triste*, I came to the conclusion that the Indian pueblo of Tenochtitlan did not reach further west than the eastern edge of the Alameda, or thereabout.¹

South of the Cathedral, San Antonio Abad, was the place called Xoloc,² where the dike crossing the lagune from Cuyucan met the dike coming from Iztapalapan. This place was then far outside of the pueblo of Mexico.³

¹ Compare Bernal Diez, *Historia Verdadera*, cap. cxxviii. pp. 134, 135; cap. cli. pp. 178, 179, 180. Cortés, *Carta Segunda*, pp. 43-45. See also Don Joaquín García-Icazbalceta, *México en 1554*, pp. 80, 81, 118, 119.

² I refer to the notes, by Archbishop Lorenzana, to the Letters of Cortés. Compare in vol. i. of Vedia's *Historiadores Primitivos*, etc., *Carta Segunda*, p. 24, note 8; p. 25, note 1.

³ Xoloc was considered to be half way between the shore and the outskirts of Tenochtitlan; and it is so laid down by Mr. Prescott on the map accompanying his *History of the Conquest of Mexico*. Clavigero had previously adopted the same view. See also the map published by Ramusio and reprinted by Icaz-

To the east, we must remember that the Peñol was, before the Conquest, far out in the waters of the lagune. The latter reached, even in this century, through channels and ditches, close to the present city, or almost to the railroad station of San Lázaro. This, again, taking into consideration the gradual filling up of the whole basin during the past three hundred years, places the eastern limits of the former pueblo at a comparatively short distance from the cathedral.

To the north, the patch of dry land, supporting the once independent pueblo of Tlatilulco, was added to Tenochtitlan. It is known that these pueblos were artificially separated by a deep trench or ditch.¹ This trench is still visible in part.

Taking now the Cathedral as a centre, and projecting the points mentioned on any recent plot of the City of Mexico, we shall be led to infer that the former pueblo of the Indians occupied, at the time of the Conquest, scarcely more than one fourth of the area now covered by the city.

Don Alfredo Chavero owns a very large oil painting representing the Indian pueblo of Mexico, and the principal events of its conquest. This painting is ascribed to one Juan Ascencion, and is said to have been executed in 1523, or two years after the capture of the place by Cortés. The view of aboriginal Mexico given by it fully confirms my suggestions as to the size of the settlement.

It is well known that every vestige of aboriginal architecture has completely disappeared from the surface of the city. The pueblo of Tenochtitlan proper was almost completely destroyed during the obstinate resistance which its inhabitants opposed to the Spaniards and their Indian allies. It was re-

balceta, accompanying *El Conquistador Anónimo*, p. 390. Cortés, *Carta Segunda*, pp. 24, 25. Bernal Diez, *Historia Verdadera*, cap. lxxxviii. p. 83.

¹ Bancroft's *Native Races*, vol. v. p. 421.

built not as an Indian town, but as a Spanish city. What was left of Tlatilulco has been completely changed in course of time through additions or repairs, so that it is impossible to recognize any feature antedating the Conquest. This has been the common fate of aboriginal structures in most of the larger Mexican towns. Their disappearance is due not so much to intentional destruction as to *transformation*.

The demolition of edifices in the City of Mexico has not been limited to Indian buildings alone. The great documentary historian of Mexico, Don Joaquin García Icazbalceta, says: "Not only the Aztec edifices have disappeared, but also the earliest ones of the Spaniards. There is not a church which has not been rebuilt twice at least, and the same has occurred with the private houses. From the beginning, the lightness of the soil caused the heavy fabrics to sink; and as the level of the soil is constantly rising, the whole city buries itself little by little."¹ Where such agencies, coupled with a slow but steady influx of foreign population and a radical change in habits of life, have been at work for three hundred and sixty years, there is little hope for the preservation of archæological remains.

Still, many very remarkable aboriginal sculptures have been disinterred in the city, — remarkable not only for their enormous bulk, but also for their singular workmanship and for the purposes which they formerly served.

These sculptures have all been found *in the immediate vicinity of the Cathedral*. This building occupies part of the ground on which stood the mounds of worship — *teocallis*, "houses of God" — of the pueblo. These mounds indicated the centre of the Indian settlement.

Although most of these sculptures are well known, they have hardly received the attention they deserve. I enumerate

¹ *México en 1554*, p. 74, note 2.

them in succession, according to the degree of prominence they have acquired : —

1. The so-called “Aztec Calendar Stone,” — found at a depth of forty-two centimetres (one foot five inches English) beneath the pavement in front of the present National Palace, south of the Cathedral, on the 17th of December, 1790.¹

2. The statue called *Teoyaomiqui*, or “goddess of death and war.” This block was found on the 13th of August, 1790, also to the west of the National Palace, and south of the Cathedral. The top of it was buried one metre and twelve centimetres (three feet eight inches) beneath the pavement; the base, about eighty centimetres (thirty-two inches).²

3. The stone called “Sacrificial Stone,” discovered northwest of the same locality, on the 17th of December, 1791, at a depth of less than fifty centimetres (or about twenty inches).³

4. The statue called “Indio Triste,” found, in 1828, behind the National Palace, southeast of the Cathedral. The street where it was disinterred now bears the name, Calle del Indio Triste.⁴

5. An enormous head of a serpent, with mouth wide open and fangs protruding. This block was exhumed on the 7th and 8th of September, 1881, while I was in the City of Mexico, and the work was performed under the direction of Señor García y Cubas. Beneath this block, one entire brick and several fragments of old adobe were found. The sculpture was found

¹ Antonio de Leon y Gama, *Descripcion Histórica y Cronológica de las dos Piedras, que con ocasion del nuevo Empedrado que se esta formando en la Plaza principal de México, se hallaron en ella el año de 1790.* Second edition, 1832, by Bustamante, p. 10.

² Ibid. p. 10.

³ Ibid. ii. p. 46.

⁴ Brantz-Mayer, *Mexico, etc.*, Letter xv. p. 88. Compare Gama, *Descripcion etc.*, pp. 85, 86, 87.

in the *átrio* (the old cemetery) of the Cathedral, southwest, or rather south, of its southwest corner, and north of the Plaza. It was buried at the depth of not quite one metre (three feet), and one of the bases of the columns of the old cathedral rested on it.

By reference to the location of these discoveries we may classify them into two groups.

The first group comprises the sculptures found southeast of the Cathedral, and near the National Palace. It includes Nos. 1, 2, and 4. We may add to them the enormous human head of "Serpentine," figured by Mr. Bancroft on p. 518 of the fourth volume of his "Native Races," and exhumed, in 1830, in the Calle de Santa Teresa, northeast of the Cathedral.

The second group comprises objects found in the immediate vicinity of the Cathedral, south and southwest of it. Besides Nos. 3 and 5 we must add to this group three stones, described by Antonio de Leon y Gama as discovered in front of the Cathedral in the year 1792;¹ among them the so-called "Gladiatorial Stone," still buried, but described and figured by Colonel Brantz-Mayer;² and fragments of another serpent's head, similar to the one already mentioned, also exhumed this year [1881] by my friend García y Cubas.

While this list does not pretend to be complete, it still contains enough to corroborate the statements of the older chronicles, to the effect that the space now occupied by the Cathedral and its surroundings was the central site of worship of the Indian population previous to the Conquest; but it becomes evident, from the manner in which these very large fragments were scattered, that the old site, enclosed as it was by a huge wall, occupied much more ground than the present Cathedral and the Plaza combined. Fray

¹ *Descripcion*, ii. pp. 46, 47, 73, 74, 76.

² *Mexico*, etc., pp. 123, 124. Bancroft, *Native Races*, iv. p. 516.

Diego Durán asserts that one of the lodges of the idols stood where the Episcopal Palace was in his time.¹ This extends the space further to the east. While we are compelled to reduce considerably the perimeter of the original pueblo of Tenochtitlan, we are still further compelled to diminish its inhabited area, on account of the great extent occupied for purposes of worship. This has its bearing on the supposed numbers of its population.

Referring now, in particular, to each of the sculptures enumerated, I will briefly state what is positively known about each of them.

THE STONE OF THE SUN. (Plate IV.)

The laborious investigations of Antonio de Leon y Gama resulted in giving to this block the erroneous name of "Aztec Calendar Stone," and making of it a so-called *gnomon*!² Yet the stone is in truth so incorrectly shaped as to render incredible the scientific knowledge which this author ascribes to its makers. The block is a very low, irregularly oblique cylinder, and its surface, even, is irregularly convex. The circles on it appear true, but this does not compensate for the other defects. The history of the stone and its present name were established successively by Señor Chavero and by Dr. Valentini.³ It has in its centre the conventional

¹ *Historia de las Yndias de Nueva-España*, vol. ii. cap. lxxxiii. p. 107. "Este templo en México estaba edificado en el mesmo lugar questa edificada la cassa arçobispal donde si bien ha notado el que en ellas ha entrado bera ser toda edificada sobre terrapleno sin tener apossentos bajos sino todo maçiso el primer suelo." This was the mound dedicated to Tezcatlipoca.

² *Descripcion*, etc., § 4 of Parte I. and *Párrafo Quinto*, Parte II.

³ Alfredo Chavero, *Calendario Azteca*, 1 Nov. 1875. "La Piedra del Sol," in *Anales del Museo Nacional de México*, vol. i. No. 7; vol. ii. Nos. 1, 2, 4, and still to be continued. Phil. J. J. Valentini, *Vortrag über den mexicanischen Calender-Stein*, New York, 1878. English version thereof in *Proceedings of the American Antiquarian Society*, April 24, 1878; Spanish, in *Anales del Museo*, etc., i. Nos. 5 and 6.



THE STONE OF THE SUN THE SO-CALLED AZTEC CALENDAR STONE

human face, adopted by the aborigines to designate the *sun*. The date is carved on the block, — 13th *acatl*, or “cane,” which corresponds to the year 1479 of our era. In the same year, according to the “Códice Aubin,” the sun presented an unusual appearance.¹ The block is described by Fray Diego Durán and by Fernando de Alvarado Tezozomoc.² The first named writer is the only one who, so far as I know, gives us any clew to its use. He states that it was made for the purpose of sacrifice. If the prevalent conceptions of the three classes of sacrificial blocks used in Mexico by the Indians are correct, the Stone of the Sun belongs to neither of them ; yet we positively know but two kinds, — one from repeated concurrent description, the other because a specimen of it has been preserved.³

The first is called *techcatl*, and is described as a stone having the ordinary length of a man, a height of not quite one metre (three feet English), and sloping towards the summit so as to form a ridge. On this block the victim was extended, so as to have his head inclining or dropping backwards, the neck being pressed down by a heavy yoke resting on the throat. Not a single specimen of the *techcatl* is known to exist.

The other is called *cuauhxicalli*, and the block referred to under No. 3 has been thoroughly identified as one of this sort. It is circular, and its distinguishing features are the cup-shaped concavity in the centre, and the channel which runs therefrom to the outer rim.

¹ *Cod. Aubin*, p. 72. This figure is accompanied by the following text in Nahuatl: “Nica qualloc intonatiah mochinez que incicitlaltin y qc mic ynaxa Yacatzin.”

² *Historia de las Yndias*, vol. i. cap. xxxvi. pp. 280–286. *Crónica Mexicana*, cap. i. pp. 415, 416; cap. li. pp. 418–420.

³ I refer to the excellent monograph by Manuel Orozco y Berra: “El cuauhxicalli de Tizoc,” in *Anales del Museo*, vol. i. No. 1. See my essay, “The National Museum of Mexico, and the Sacrificial Stones,” in the *American Antiquarian* of 1878.

Of the third class, the "gladiatorial stone," we know that it was cylindrical, and perforated in the middle. The victim was fastened to a rope passing through this hole, and the rope was long enough to allow him to move on the block. It has been asserted that such a stone was discovered and left buried near the Cathedral of Mexico, but the descriptions and pictures of it prove that it was not a sacrificial block of this kind; the essential feature, the hole in the centre, is wanting. The name given to the gladiatorial stone was *temalacatl*. It has been believed that this stone was of great size and weight, but the difficulty of renewing or replacing the rope every time it was worn out seems to me an objection to this supposition. The stone lay flat, and to renew the rope would have necessitated lifting the enormous bulk on one side. This operation would have been difficult.

There are in the National Museum at Mexico a number of cylinders, like mill-stones of various sizes, sculptured in low relief and perforated in the middle. One of these stones has a thickness of thirty-five centimetres on one side, and thirty-three centimetres on the other (about twelve inches). They are far too heavy for one man to handle, but can be easily lifted by two. A similar block, found at Tecomavaca, in the State of Oaxaca, is preserved in the Instituto of Oaxaca. It does not essentially differ from the others. It is eighty-four centimetres (two feet ten inches) in diameter, eighteen centimetres (seven inches) thick, and the hole has a diameter of eleven centimetres (four inches) at the surface. The perforation is not cylindrical, but tapers from both sides towards the middle of the disk, and its edges are not sharp, but look as if smoothed by wear and friction. A block of this kind and size, with a rope passed through it and fastened to the ankle or even around the body of a man, would be of sufficient weight to hold him back, unless he was of gigantic strength; but two men could easily lift it to fasten or replace the cord

whenever required. These stones are sometimes called *tcmalacatl*, and while they agree in general with the description of the gladiatorial stone, their size obviates the reasonable objection against its supposed great bulk.¹

Still there is no doubt that the captive, once tied and ready for combat, was allowed a wider range than that which these small disks present. It is also certain that the ring, over which he might move, was the top of a huge cylindrical block. If we suppose the smaller stone serving as a clog, placed on top and in the centre of a mass like the Stone of the Sun, the two together would represent the needed combination.

The carved surface of the Stone of the Sun rises above an irregularly broken rim around it. This rim is smooth on its surface, as if worn down in part by frequent walking upon it. This would have been the case had it been used for gladiatorial sacrifice.

These facts may excuse the temerity of the inference that the Stone of the Sun was originally placed on one of the artificial mounds in the centre of the Indian pueblo of Mexico, and that it served as the base of the smaller perforated stone to which the victim was tied, and that upon the two stones the gladiatorial sacrifice was performed.

This inference is raised almost to positive certainty by documentary evidence of great weight. Fray Diego Durán, a native of Mexico, who died in 1588, says, in speaking of the two great sacrificial blocks set up in 1479: "He (Axayacatl) also busied himself with working the great and famous stone, highly adorned, on which were carved the figures of the

¹ These small cylinders are known also as "calendar stones." Both the Stone of the Sun, at Mexico, and the stone at Oaxaca, are respectively called in each city, *la piedra del reloj*. The carvings on both show a certain analogy in design, but the resemblance is still greater between the Oaxaca block and the Sacrificial Stone proper of Mexico.

months and years, days and weeks, in such a curious manner that it was worth seeing. This stone we often saw in the great square, near to the Azequia, and the Illustrious and Reverend Lord Don Fray Alonzo de Montufar, most worthy Archbishop of Mexico, of blessed memory, caused it to be buried for the great sins committed on it through killing.”¹

In the second volume of his “*Historia de las Yndias de Nueva-España*,” the same author again describes the *temalacatl*, and repeats that he and many others “saw it often in the great square, close to the Azequia, where daily a market is held in front of the royal houses ;” and that the Archbishop Montufar had it buried.² The place indicated closely agrees with that where the Stone of the Sun was found, as stated by Leon y Gama, “at the distance of eighty varas west of the same second doorway of the royal palace, and thirty-seven varas north of the Portal de las Flores.”³

In regard to the carvings on the Stone of the Sun, I shall but say that the following parts of them are ascertained beyond all doubt :—

1. The central figure representing the sun, and perhaps the year also.
2. The twenty figures placed in a circle around it, representing the twenty days of the Mexican month.
3. The date, 13th *acatl*, or 1479 A. D., above the head of the sun, on the rim or border.

Beyond this, the signs are still subjects for interpretation. Interpretations have been furnished, since Leon y Gama wrote, by the two high authorities, to whom I have already referred, and I do not feel competent myself to go over the ground which they have so ably searched.

¹ *Historia de las Yndias*, vol. i. cap. xxxv. pp. 272, 273.

² *Ibid.* vol. ii. cap. lxxxvii. pp. 149, 150, 151, 152.

³ *Descripción*, etc., parte i. p. 10.



TEOYAOMIQUI, THE GOD OF WAR AND DEATH.

THE STATUE CALLED THE "GODDESS TEOYAOMIQUI."

(Plate V.)

It is to Antonio de Leon y Gama that this great monolith also owes its name. The block, which is two metres and sixty centimetres (eight and one half feet) high, one metre and seventy centimetres (five and one half feet) wide, and one metre and fifty-five centimetres (five feet) thick,¹ is made of porphyritic basalt (according to Humboldt).² It is covered with carvings almost to overloading. However well executed some of them are when taken singly, their combination on the block is devoid of symmetry, and indicates almost as primitive a mode of sculpture as that shown in two rudely blocked out heads in the public library of Vera Cruz. The general effect, however, is appalling, and the stone presents a most hideous agglomeration of repulsive forms.

The two faces of this sculpture are not alike. Gama adopts the view that one represents a male, the other a female, figure, and calls the rear figure *Huitzilopochtli*, and the front, *Teoyaomiqui*, stating that the latter was the former's companion.³ It is a little singular that not one of the older authors on Mexico mentions an idol or deity called Teoyaomiqui.

In studying the descriptions of Mexican idols handed down to us from the sixteenth century, we should never fail to discriminate between the actual carved bulk, sometimes of stone, sometimes of wood, and the adornments, hangings, or trappings placed on and about it. The former only was permanent (provided the statue was not destroyed); the other was liable to change according to necessity, and certainly liable to disappear, either by removal or decay. The present condi-

¹ *Description*, etc., i. p. 10.

² Or "porphyre basaltique," *Vues des Cordillères et Monuments des Peuples Indigènes de l'Amérique*, 1816. Vol. ii. p. 148.

³ *Description*, etc., i. pp. 35-44.

tion of these sculptures at Mexico is not, therefore, their original state. They lack the bright shining stones (of more brilliancy than value) set in their eyes or hung around their wrists and waists, the gaudy cloth with which they were decked, and the feathers forming tall crests on their heads. What now remains of such idols is but the skeleton of their former appearance.

The descriptions left us by eye-witnesses of the Conquest, and by the early missionaries, include three classes of facts :

1. The materials of which the figure and the ornaments were made.

2. The salient features of what I have termed the skeleton of the idol.

3. The loose or temporary appendages or ornaments.

Of these only the first two come into consideration here, the third class having entirely disappeared.

Assuming now that the statue in question had been but recently discovered, and no theory had yet been advanced as to its probable purpose and dedication, — thus putting out of view for a time the explanations of Gama, — our first step should be to compare it with whatever descriptions are left of ancient Mexican idols, particularly by such writers as saw them in actual use.

There can hardly be any doubt as to the fact that our block once pertained to the central cluster of mounds of worship in aboriginal Mexico. It is not to be supposed that it was dragged from any other place to the main square for the purpose of burying it there. We are therefore justified in looking among the statues of that celebrated cluster for one which might agree with our monolith.

Turning first to the eye-witnesses and participants of the Conquest we find that Cortés himself speaks of the idols of Mexico only in general terms.¹

¹ *Carta Segunda*, p. 33.

Andrés de Tápia, one of the leading *conquistadores*, speaking of the chief mounds of Tenochtitlan, mentions two idols placed on large stones in front of the principal towers. Each one was about three varas (two metres and fifty-three centimetres, or eight and one-half feet English) high, of the bulk of an ox, and made of polished stone. The stone was covered with mother-of-pearl, with many bright stones pasted on it. The idols were girt with big snakes of gold; each had a collar of ten or twelve golden human hearts, a golden mask for the face, eyes of "mirror," and on the back of the head there was another face, "like the head of a man without flesh" (a skull).¹ Bernal Diez de Castillo, another *conquistador*, particularly mentions three statues, one of which he calls Huichilóbos, describing it as follows: "Its face was very broad, its eyes were distorted and frightful, and its whole body covered with gold, pearls, and pearl-drops,—all fastened on with glue (*engrudo*), which in this country is made from a certain root. The body was girt with large snakes covered with gold and jewels. In one hand it held a bow, and in the other some arrows. . . . On the neck the Huichilóbos had faces of Indians, and other things like hearts of Indians. . . ." Another statue he calls Tezcatlipuca, and says of it: ". . . It had a visage like that of a bear, and shining eyes made of mirrors called *tescat*, and the body was covered with rich stones stuck over it after the same manner as the other; . . . and around the body were strung figures like little devils, with tails like lizards. . . ." Finally he mentions a third idol, placed apart from the others, "half man and half lizard (*lagarto*, properly alligator), all covered with rich stones, and half of it draped. Of this one they said that the half of it was filled with all the seeds of the land, for he was the god of the crops and fruits. . . ." ²

¹ *Relacion de la Conquista de México*, pp. 582, 583.

² *Historia Verdadera de la Conquista de Nueva-España*, cap. xcii. p. 90.

The "Anonymous Conqueror," like Cortés, speaks of the Mexican idols only in general terms.¹

Among the early missionaries, neither Fray Pedro de Gante nor Fray Toribio de Paredes (called Motolinía) gives any specific description that would apply to our subject. The same is to be said of Fray Bernardino Ribeira, surnamed Sahagun, who has given us a number of details about sundry idols, none of which, however, agree in the least with our statue. It is true that he fails to describe the principal male idols, Quetzalcohuatl excepted.

Of the three contemporaries of the Conquest, who wrote on the subject without having visited Mexico themselves, Peter Martyr, of Anghiera, is very laconic. He only says: "It is a fearefull thing to be spoken, what they declare and report concerning their idols. I omit, therefore, to speake of their greatest marble idol, Wichilabuchichi, of the height of three men, not inferior to that huge statue of Rhodes."² The "three varas" of the eye-witnesses had already grown considerably.

Gonzalo Fernandez de Oviedo y Valdés follows Cortés in one part of his statements, and in other portions is very brief and general.³ Francisco López de Gómara and Bernal Diez closely agree in their description of the idols of Mexico. The former reports that the gods of Mexico were two thousand in number. The principal ones were called Vitcilo-puchtli and Tezcatlipuca, whose idols stood on the height of the temple, over the two altars. They were of stone, and of the form, height, and size of a giant. They were covered with mother-of-pearl; and on it were pasted, with glue of

¹ *El Conquistador Anónimo*, p. 384.

² *De Nouo Orbe, or The Historie of the West Indies, containning the Actes and Aduentures of the Spanyardes*. Translation of the eight Decades, by Richard Eden and Mr. Lok. London, 1612. Dec. v. cap. iv. p. 197.

³ *Historia General y Natural de las Indias*, vol. iii. lib. xxxiii. cap. xi. pp. 304, 305; cap. xlv. pp. 503, 504.

zacotl, many pearls, stones, and pieces of gold,—and birds, lizards, animals, fish, and flowers, made of mosaic of turquoises, emeralds, chalcedonies, amethysts, and other fine stones, which made pretty ornaments upon the mother-of-pearl. As a girdle each had thick snakes of gold; and as a necklace, ten human hearts of gold; and each had a golden mask with eyes of mirror, and on the back of the head the face of a skull,—all of which had its import and meaning.¹

Gómara's book was first published in 1552; it is not likely, therefore, that he consulted Bernal Diez who wrote twenty years later; and the agreement between the two is indeed striking, and gives great weight to the statements of both, as well as to that of Andrés de Tápia.

Towards the close of the seventh decade of the sixteenth century, a very strong effort was made, by order of the Viceroy Don Martin Enriquez, to collect and preserve the antiquities of Mexico. The immediate result was that two ecclesiastics of different orders, both native Mexicans and related to each other, framed two independent works on the history and the former creed and customs of the natives. These works are based upon a careful and critical study, for the time, of what was then left (about fifty years after the Conquest) of the antiquities of Indian Mexico. Part of the knowledge possessed by the authors had been gained from actual remains, a much larger part from paintings, customs, traditions, and songs, and part from their own experience. These authors were the Jesuit Father Juan de Tobar and the Dominican Fray Diego Durán.²

¹ *Crónica General de las Indias*, Seg^a Parte, p. 350.

² Through the discovery in 1879 of a correspondence between the Jesuit fathers Tobar and Acosta, at the Lenox Library in New York,—of which I gave an account to the New York Historical Society at their meeting of Nov. 4, 1879, and afterwards in the *Nation*,—I established the fact that the so-called *Códice Ramirez* was a work of the former writer, and that he and his rela-

Both of them have preserved descriptions of the main idols of the pueblo of Mexico, and it is interesting to compare them with those of the eye-witnesses already quoted. They speak of four principal deities and statues, thus corroborating Fray Francisco of Bologna, who says: "They worshipped a great number of idols, among which there were four principal ones."¹ From the manner in which those who saw the idols *in situ* speak of them, we must conclude that they were particularly distinguished by their enormous size. This is given by Andrés de Tápia at three varas, and it is noticeable how closely this agrees with the height of our statue. It is therefore not unreasonable to suppose that the latter was one of the four chief idols of Mexico. The names of the four great deities mentioned by Tobar and Durán are Huitzilopochtli, Tezcatlipoca, Quetzalcohuatl, and Tlaloc, — the first two being the same as those given by earlier writers.

In regard to the first, both Tobar and Durán state that his statue was of *wood*. The conquerors, and those who wrote from their reports, are equally positive in asserting that it was made of *stone*. The picture given by the later authors presents the aspect of the idol when fully dressed, the temporary ornaments claiming chief attention. I translate from Tobar: "The figure of this great idol, Huitzilopochtli, was a statue of wood, carved in the likeness of a man, seated on a

tive, Fray Diego Durán, might be considered as the founders of an independent "school" of authors on Ancient Mexico. I communicated my discovery at once to Señor D. Joaquín García-Icazbalceta, of the City of Mexico, and in the Appendix to his latest work, *Don Fray Zumárraga, primer Obispo y Arzobispo de México*, Mexico, 1881, the celebrated historian has published the full text of the correspondence between Tobar and Acosta. The material from which Tobar and Durán gleaned is not yet thoroughly established; we are not yet positive which Indian paintings, for instance, they consulted; but enough is known to give great value to their writings.

¹ *Lettre du Révérend Père Francisco de Bologne*, in Ternaux-Compans, *Recueil de pièces relatives à la Conquête du Mexique*, 1838, p. 212. The letter bears no date.

blue bench placed on a frame, and from each corner there projected a beam, terminating in the head of a lizard. The bench was blue, by which they denoted that he was sitting in the skies. The forehead of the idol was blue, and over the nose there ran a blue band from ear to ear. On his head he had a rich crest of peacock's feathers, and a bird's beak of polished gold; the feathers were green, very numerous and handsome. He was draped in a green robe, and over it there hung from the neck an apron (*delantar*) of rich green feathers, garnished with gold, which, as he was seated on the bench, covered him down to the feet. In the left hand he held a shield with five pineapples made of white feathers set crosswise; around the shield hung yellow plumage like a fringe, and over them a flag of gold; and in place of the handle there projected four darts. . . . In the right hand this idol held a staff shaped like a snake, all blue and wavy. He wore a fan-like scarf (*banderilla*), that terminated on the shoulder, of polished gold; on his wrists were golden bands, and on his feet blue sandals." ¹

It is evident from this description that it mainly applies to drapery and ornamental appendages, — all of a perishable nature, which neither Tobar nor Durán could have seen. Nothing is said of the body of the idol itself, but that it was of wood. The conquerors saw it and probably handled it; the others did not, but obtained their information at second hand. I therefore give preference to the assertions of the former.

The same remarks apply to the description of the statue of Tezcatlipoca. The only allusion to its real body by Tobar, or Durán, is that it was made of black shining stone.²

¹ *Códice Ramirez*, Tratado 2º, cap. i. pp. 93, 94.

² *Id.* Tratado 2º, cap. ii. p. 104. *Historia de las Yndias*, etc., vol. ii. cap. lxxxii. p. 98.

The remainder of their long accounts relates exclusively to ornaments.

Of Quetzalcohuatl a better description is given, but it is not quite clear whether the description relates to an idol of Mexico or to one at Cholula. Tobar asserts that it was of wood, "in the shape of a man, but the face was that of a bird with comb and wattles (*cresta y verrugas*), with a row of teeth in the protruding tongue. . . ." ¹ The rest again relates to perishable appendages. It fairly agrees, on the whole, with the statements of Sahagun.²

Durán alone has given us a description of Tlaloc as he was represented at aboriginal Mexico. "The statue of it," he says, "was of stone carved as the effigy of a frightful monster, the face very ugly, like that of a lizard with very large fangs; . . ." and he goes on to describe the adornments and trappings of the figure.³

If now, on the supposition that the statue called that of the goddess Teoyaomiqui was one of the four main idols of Mexico, we compare it with the statements herein collected, it must strike us that neither Quetzalcohuatl nor Tezcatlipoca properly corresponds to it. The choice is left between Huitzilopochtli and Tlaloc; and if we recall the principal features of the statue of Huitzilopochtli as described, they are found represented on the sculpture before us:—

1. The general hideousness of its appearance.
2. Its height and bulk.
3. The girdle or belt of snakes around the body.
4. The skull or skulls.

In place, therefore, of christening the monolith after an

¹ *Códice Ramírez* Tratado 2º, cap. iv. p. 117, agrees literally with Durán.

² *Historia General de las Cosas de Nueva-España*, vol. i. lib. i. cap. v. p. 4. He makes no mention of the head.

³ *Historia*, etc., vol. ii. cap. lxxxvi. p. 135.



THE SACRIFICIAL STONE.

imaginary composite deity of whose existence the oldest authorities make no mention, it strikes me as much more natural to believe that it represents the well-known war god of the Mexican tribe, Huitzilopochtli; and that consequently it was indeed the famous principal idol of aboriginal Mexico, or Tenochtitlan.¹

THE SACRIFICIAL STONE. (Plate VI.)

The late archæologist and historian, Manuel Orozco y Berra, has satisfactorily proved the character of this relic. I refer to his valuable monograph on that subject.² But while gratefully accepting his conclusions in regard to the character of the sculpture and its original purpose, I still remain at variance with his deductions in regard to its date and the signification of its bas-reliefs. His courteous, pleasant, and thorough rejoinder³ to my observations was, unhappily, one of the later incidents of his life, and I was myself precluded from investigating the questions involved any further. When I reached the City of Mexico, the first news I received was that Manuel Orozco y Berra had recently died. It was a shock to me, for I had hoped to make the personal acquaintance of the aged scholar. It also effectually "closes the discussion," so far as I am concerned.

The Sacrificial Stone appears to be a regular cylinder. Still, such is not the case. If the square is applied to it, its sides are not vertical, even allowing for inevitable wear and

¹ In addition to the evidences given, I must allude here to the following statement by Tezozomoc, *Crónica*, etc., cap. l. pp. 415, 416 (speaking of the captives), "subiéronlos en lo alto de el Huitzilopochtli adonde estaba su estatua frontero la gran piedra Temalacatl." It is noticeable that the Stone of the Sun and the statue just discussed were found close together. Gama, *Descripción*, etc., i. p. 10.

² "El Cuauhxicalli de Tizoc" in *Anales*, etc., vol. i. No. 1.

³ See p. 55, note 3. Señor Orozco's reply is in *Anales del Museo Nacional*, vol. ii. No. 1, pp. 77, 78, note 2.

tear. This shows it to have been worked out by mere rule of thumb, and without the aid of instruments. This is further illustrated by another circumstance. There is, at the base, a concavity, apparently an original defect of the block. One of the figures in the series around the outer rim of the stone is partly carved within this depression. This would seem to indicate that the workmen did not have the means to correct the defect, but made the best they could of the stone without attempting to shape it nicely.

THE INDIO TRISTE. (Plate VII.)

I have already stated that this block, which is about one metre (forty inches) high, and sixty-one centimetres (twenty-four inches) wide, was disinterred about 1828. Still, there is an earlier mention of a similar statue, by Leon y Gama.¹ The Indio Triste has not, as yet, attracted the attention which it really deserves. Being simply the figure of a squatting Indian, fairly executed, but without any striking symbolical ornaments, it has escaped the notice of interpreters. Gama has suggested an explanation of the statue which he describes, and by supposing that the empty space between its fingers was originally occupied by a drinking-cup, he interprets it as probably the statue of a god of wine.

Following the method pursued in regard to the Stone of the Sun and the idol of Huitzilopochtli, I have examined the older authors for any notice which might correspond to the Indio Triste.

Two years ago I met with the following statement by Fray Juan de Tobar,² speaking of the place of worship of Huitzilopochtli: "It had on the tops of the chambers and rooms where the idols were a handsome balcony (or balustrade) made

¹ *Descripcion*, etc., parte ii. p. 86, § 155.

² *Código Ramirez*, Tratado ii. cap. i. p. 95.



THE "INDIO TRISTE"

of many small stones as black as jet, set with much regularity, so as to form a field checkered black and white, which was very conspicuous from below ; over this balcony (or balustrade, *pretil*) there rose turret-like battlements, and on the top of the pillars were two Indians of stone, seated, with candlesticks in their hands. . . ." This statement is corroborated by Durán.¹

The figure of the Indio Triste exactly fits the above description. The hands join as if he was holding something in front of himself, and the size of the opening thus left is just fitted for a good-sized torch. Brantz-Mayer has remarked in regard to it : " This figure was probably set on the wall or at the portal of some edifice, and in his hand was erected a banner or insignia of command." ² Had this accurate and trustworthy writer had access to the sources to which we now can refer, he might have enjoyed the pleasure of seeing his suggestion confirmed, with a slight amendment, by highly respectable early authority ; but neither Durán nor Tobar were known or accessible when Colonel Mayer wrote his valuable book on Mexico.

I have unhesitatingly accepted the Indio Triste as a torch-bearer of stone, — consequently as a mere ornament, without any direct relations to worship whatever.

THE COLOSSAL HEAD OF A SNAKE.

It was impossible for me to take measurements or make a sketch of this carving. The block represents the head of a snake, with feather ornaments on the back. The mouth is open, and enormous fangs protrude from it. This stone was found beneath the base of one of the columns of the old

¹ *Hist. de las Yndias*, etc., vol. ii. cap. lxxx. p. 83.

² *Mexico as it Was and as it Is*, p. 88.

cathedral, which was razed at the close of the sixteenth century to make room for the present edifice. It appears that the column rested on the sculpture,— had been built on it. Señor García y Cubas, who conducts the explorations, informed me that he had discovered the fragments of another similar serpent's head. It is not impossible that they might be the broken pieces of a block, forming "the face and head of a serpent," which was disinterred on the 18th of June, 1792, on the south front of the Cathedral, and afterwards disappeared again. Leon y Gama gives the size of that stone as follows: length, one metre and fifty-eight centimetres (sixty-two inches); width across the fangs (*colmillos*), one metre and twenty-seven centimetres (fifty inches);¹ heights, respectively, one metre and thirteen centimetres, and eighty-five centimetres (forty-four and thirty-four inches). These dimensions, so far as I could judge, nearly agree with those of the head recently exhumed. Gama states that the lower jaw was not attached to his specimen, whereas the one lately found is complete.

Gama supposes that the lower jaw was never connected with the upper part of the head, but lay on the ground below it, the two forming a doorway like the open jaws of a monster. Such a doorway existed in Old Mexico; Bernal Diez saw and described it.² The suggestion, however ingenious it looks, becomes unnecessary in presence of the simple fact that the wall, surrounding the cluster of mounds of worship of the old pueblo, was composed of a series (like a procession) of snakes' heads, all of colossal size, with mouths wide open and fangs exposed.³ The annexed cut (Fig. 2) is a fac-simile of Durán's

¹ *Descripcion*, etc., ii. pp. 74, 75, § 145.

² *Historia verdadera*, cap. xcii. p. 91.

³ *Códice Ramírez*, Trat. ii. cap. i. pp. 94, 95: "Tenia este templo una cerca muy grande, que formaba dentro de sí un muy hermoso patio; toda ella era labrada de piedras grandes, á manera de culebras asidas las unas de las otras; llamábase esta cerca Chuatepantli, què quiere decir cerca de Culebras." Durán, *Historia*, etc., vol. ii. cap. lxxx. p. 83.

picture of the *Cohuatepantli*, or "snake-wall." We also know that the large heads of that enclosure were used when the first cathedral was built, to support the columns or pilasters of that church.¹ In such a position, serving as basis for a column, García y Cubas found the Serpent's Head last

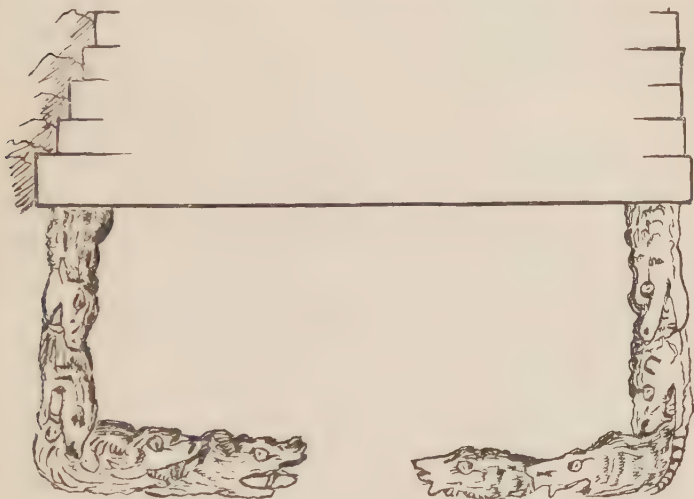


FIGURE 2.

September; and there is consequently but one impression among scientific men in Mexico, — which impression I fully share, — that it was one of the pieces capping the outside enclosure of the worship-mounds of aboriginal Mexico, a true and well preserved fragment of the *Cohuatepantli*; and as the one described by Gama so closely agrees with that found by García y Cubas, it is but reasonable to suppose that both belonged to the same construction.

The discovery of García is also instructive and important in

¹ Durán, *Historia*, etc., vol. ii. cap. lxxx. p. 83: ". . . las quales piedras el que las quixiere ber baya á la yglesia mayor de México y alli las bera servir de pedestales y asientos de los pilares della."

respect to the material of the great wall mentioned. He informed me that beneath the block he had found adobe bricks, one entire, and fragments of several others. We thus learn that the stone blocks representing snake-heads rested on a wall of adobe. This throws a singular light on the architecture of aboriginal Mexico. A similar mode of construction is met with in other parts of the Republic, as I shall hereafter show when treating of Mitla.

This discussion of the most important Indian statues found in the City of Mexico very naturally leads to the National Museum where, with the exception of the Stone of the Sun, they are all preserved. If the Stone of the Sun itself has not yet been transferred to the same place, it is only because the hall for its reception is not yet ready. A great many valuable objects of stone are still kept temporarily in the charming interior court of the Museum, but it will not be long before they are housed and cared for in the way they deserve. The most valuable and costly part of the collection is already placed and exhibited in the upper rooms, open at stated intervals to the public. Professor Gumesindo Mendoza, director, or curator, of the Museo Nacional de México, has had a herculean task before him. His duty it was, above all, to save, and then to place what he was able to save before the public in such a manner as to induce that public to save more. It cannot be denied that he has successfully performed his task, particularly in archæology. The Museum presents a lucid array of almost everything which aboriginal art has produced in Mexico. The house-life of the Indians before the Conquest, their articles of dress, their mechanical and agricultural tools, are sparingly represented, owing to want of space. Señor Mendoza is constantly collecting, and since the Mexican nation has wisely decided (though not for the

interest of foreign archæologists) that Mexican antiquities are to be preserved at home, his material rapidly accumulates. The "Anales del Museo Nacional de México" will eventually become a descriptive and critical catalogue, beautifully illustrated, of the institution.

The inner court of the building, now the temporary abode of the largest statues, contains among them also the great reclining figure, made of a light-colored limestone, exhumed at Chichen-Itza, in Yucatan, by Dr. Augustus LePlongeon and Mrs. LePlongeon, and christened Chac-Mool, by its discoverers. Opposite to it has been placed another and almost identical sculpture, but of black volcanic rock, and found, as reported, in the State of Tlaxcala. It appears also that a third one is still preserved in the garden of a house of Señor Barron at Tacubaya.¹ Finally, while exploring the western slopes of the extinct volcano Yztac-cihuatl, I heard, at the pueblo of San Andrés Calpan, of a large sculpture in possession of an Indian called Pedro Garcia. Upon visiting him I was surprised to see a torso, fairly executed, made out of the dark volcanic rock so common about the volcanoes, and called by the Indians *tetzontli*. It was very nearly life-size, and held over the navel, with both hands, a round disk with narrow rim, exactly in the same manner as the Chac-Mool and the statue from Tlaxcala. The similarity was striking, but as the head and lower limbs were both gone, I could not speak of absolute identity. This block was found by a young Indian in a field on the eastern edge of the *Malpaïs*, or great flow of lava encircling the volcano of Popocatepetl, between the pueblos of San Buenaventura Nealtica and San Baltásar, on the road to the City of Atlixco, consequently in the State of Puebla. I endeavored, on the 19th of May, 1881, to pur-

¹ Jesus Sanchez, "Estudio acerca de la estatua llamada Chac-Mool ó rey tigre," in *Anales del Museo*, vol. i. No. 6, pp. 274, 276.

chase the statue for the State Museum of Puebla, but failed, owing to the mistrust and unreliability so common among the Indians of that region.

The Chac-Mool has excited not only deserved attention, but also very bitter controversies about its purposes and real object. The question turns on the point whether it was an idol or not. Its discoverers consider it to have been a personal monument, a sepulchral statue. I have not the slightest desire to enter into the controversy myself, and would only observe here that it has not yet been determined what the distinguishing features of an idol are in the aboriginal statuary of Mexico. There are indications to the effect that statuary made for purposes of worship was always composite; that is, the central form or figure was so surrounded by forms denoting attributes, as to give that confused, almost nondescript appearance of which the great idol of Huitzilopochtli is typical. Should such be the case, then the Chac-Mool was no idol. The point concerns not this statue alone, but all simple (not composite) human or animal forms of aboriginal Mexican art. As bearing upon the question I may refer to the existence, close to the City of Mexico, of a sepulchral monument of undoubted Indian origin, antedating the Conquest, and representing the life-size figure of the man whose memory it was intended to preserve. This is the bas-relief on the eastern base of the hill of Chapultepec, the effigy of Water-rat, or Otter (*Ahuitsotl*), one of the later head war-chiefs of the Mexican tribe.

The hill of Chapultepec is one of those isolated rocks which protrude here and there above the swampy soil of the valley. It was formerly surrounded by a marsh, and was thus an excellent place for refuge and defence.¹ The Mexican tribe

¹ I found, on the southeastern slope of the denuded hill, beneath the palace, fragments of old pottery and many obsidian chips, specimens of which are now at the Peabody Museum in Cambridge.

availed themselves of it for a time, previous to their flight into the middle of the lagune.

The hill has an excellent fresh-water spring, and swamp cypresses grow along its base, forming a grove around the otherwise rather denuded eminence. Chapultepec, owing to its fresh-water supply, was a point coveted by the various tribes settled in its vicinity. When the Mexicans, sallying from the partly artificial island which they occupied in the lagune, overpowered the Tecpanecos on the mainland, they immediately seized Chapultepec, and constructed a dike from it to their pueblo, along which they conducted the water of its spring in large troughs. But the hill was never used as an Indian residence, still less as a "summer resort" for the chiefs, or a "royal villa," as has been imagined.¹ It was used to some extent as a burial-place, and a few of the leading chieftains of Mexico had their effigies carved in specially fitted nooks and recesses.² At the close of the last century two of these effigies were still in existence;³ but when I inquired about them at the City of Mexico I was assured that they had completely disappeared. Nevertheless I found, on March 6, 1881, what clearly appears to be the remainder of the effigy of Ahuitzotl, the last Montezuma's predecessor in the office of chief commander of the Nahuatl Confederacy. It was carved in half-relief, and was originally a full-length figure of a man, life-size, stretched out on a ledge

¹ As a salient and striking object, and on account of the fresh-water springs, Chapultepec was worshipped; but I find no trace among older authors of any settlement there, still less of a summer palace, at the time of the Conquest.

² Tobar, *Código Ramirez*, makes no mention of such a custom, but Durán (*Historia*, etc., vol. i. cap. xxxi. pp. 249-252; cap. xxxviii. p. 302; cap. l. p. 403) and Tezozomoc (*Crónica*, etc., cap. xl. pp. 368, 369; cap. liv. p. 430, etc.) are both very positive and detailed. The former even gives a picture of one of the statues; Tratado 1, lam. 9.

³ Gama, *Descripción*, etc., ii. pp. 80, 81. The late Señor Don José Fernando Ramirez is the only writer who asserts that there were still remains at his time. This he states in note 1 on p. 251 of vol. i.; Durán, *Historia*, etc.

of natural rock sloping at an inclination of nearly fifty-five degrees. Only the lower limbs are preserved. The top and the whole body have evidently been blown off; nothing remains of them but three fragments. The feet also are mutilated; they appear to have stood on an imperfectly carved moulding. But the principal features of the monument are the figure of *2d acatl*, or "cane" (still visible to the right of what was once the head), and beneath it the picture of a water-rat. Both are sufficiently distinct. The former is a *date*, and corresponds to 1507 of our era; the latter is a *name*, and reads "Ahuitzotl" in the native Mexican language. There can be no doubt as to the identity of the latter, and consequently no doubt that the monument really is that of the chief thus called; but the date is rather puzzling. If it signifies the year of Ahuitzotl's death, then it is at variance with all the other chronologies of the Mexican tribe. It is true that these chronologies vary greatly among themselves, although the majority place the death of Ahuitzotl in 1502, or the year *10th tochtli*, or "rabbit."¹ Either, therefore, the date refers to the year when the sculpture was executed, or the chronologies are in error as to the year of the death of the chief. The rock is, however, so much mutilated and worn that one or more of the numeral points may be obliterated completely.² This possibility (and a num-

¹ Compare (in the same volume of the *Bibliotéca Mexicana* as the works of Tobar and Tezozomoc) the "Ojeada sobre la Cronologia Mexicana," by the late Orozco y Berra. It will give the reader a very good idea of the difficulties which any one has to encounter in an attempt to trace a chronology of events in aboriginal Mexico, even within one hundred years previous to the Conquest. There is but a single point which may be deemed sure, the year of Cortés' arrival, 1519, which coincides with the native yearly sign, *1st acatl*, or "1st cane." From this we may, with some degree of security, reckon back. But in regard to the death of Ahuitzotl, there are not less than seven different years; namely, 1494, 1501, 1502, 1503, 1504, 1505, and 1516. If the sculpture at Chapultepec refers to the event, we have an eighth one, 1507.

² Don José F. Ramírez mentions but one dot to the sign of *acatl*. If I have been deceived in my observation, and there is but one dot, then the date would correspond either to 1467 or to 1519.

ber of others) must be taken into consideration and carefully weighed ere we grasp at a conclusion, never forgetting that the accepted chronology of ancient Mexico rests on a very slender basis, and that even the undoubtedly Indian pictures or sculptures are far from being as reliable guides as is commonly supposed.

The questions raised about the object and purpose of the Chac-Mool also apply to the large head of Serpentine at the National Museum, which Mr. Bancroft has figured on p. 518 of vol. iv. of the "Native Races." It is ninety-one centimetres (thirty-six inches) high, and seventy-three centimetres (twenty-nine inches) wide. Mr. Bancroft justly remarks about it: "The bottom being covered with sculpture, it seems that the monument is complete in its present state." This is not the only instance of single carved heads without bodies attached to them, which has come under my notice. In the district of Cholula, on the hacienda de San Benito, and about the pueblo of Calpan, I saw and obtained a number of heads,—mostly about life-size, found by the side of skeletons,—and always without any trace of a body or limbs. This may indicate a custom of burying the effigy of the deceased along with the corpse,—somewhat analogous to the practice of the ancient Mexicans, of burning a wooden effigy in place of the corpse of a warrior whose body had remained in possession of the enemy. Such heads have been, for the most part, regarded as idols, but it is worth while to consider whether they may not simply be funeral portraits.

I have already alluded to the imperfections of aboriginal art in Mexico. While many of the faces and heads are well done, particularly those of clay, this excellence very rarely, if ever, extends to the other parts of the body. On the contrary, there is always a certain disproportion and consequent lack

of harmony. The Chac-Mool, which (excepting, perhaps, the Indio-Triste) is the best of all, still shows strange defects in the proportions of its lower limbs. The same is true in regard to the figures of animals. Quadrupeds are mostly rude in shape ; still I have seen more than one head of a tiger which is fairly executed. Birds are always monsters, the workmen being unable to overcome the difficulty of rendering the plumage ; but all simple forms, like snakes, turtles, frogs, and reptiles generally, seem to be well imitated. Thus the head, coils, and rattles of the rattlesnake are excellent. Fishes are poorly represented ; and plants, which rarely occur except as leaves and single flowers, are mostly of stiff conventional types. The art of sculpture in aboriginal Mexico, while considerably above that of the Northern Village-Indians, is still not superior to the remarkable carvings on ivory and wood of the tribes of the Northwest Coast, and often bears a marked resemblance to them.

Omitting, for the present, all reference to pottery, flint, obsidian, metallic implements and ornaments, tissues, and Indian paintings, all of which are represented in the National Museum and in private collections at the city of Mexico, I turn now to the main part of my work while on Mexican territory. After spending the 3d, 4th, 5th, and 6th of March, 1881, at the city, and partly in company with M. Désiré Charnay, I concluded, upon his advice, to select the site of the former pueblo of Cholula, in the State of Puebla, as my field for investigation. I left Mexico on the night of the 6th, by rail ; and after enjoying, while swiftly traversing the valley, the sight of the great volcanoes by moonlight, I spent the whole of the 7th of March at Puebla, and reached my place of destination on the morning of the 8th of March, 1881.

PART III.

STUDIES ABOUT CHOLULA AND ITS VICINITY.

TO the east of the City of Mexico and of the valley which bears its name, beyond the two great volcanic peaks of the Yztac-cihuatl and Popoca-tepetl, lies the State of Puebla. Like most of the States of the Mexican Confederacy it is very irregular in shape. The line of the Vera-Cruz and Mexico Railroad divides it into two unequal portions, of which the southern is much the larger. It lies between $17^{\circ} 52'$ and $20^{\circ} 36'$ latitude north; $96^{\circ} 51'$ and $98^{\circ} 50'$ longitude west. Its population has increased from 491,291,¹ about the close of the past century, to 704,372 in 1878, and is spread over an area of 31,120 square kilometres (about 12,000 square miles English.)² Its general topography may be thus briefly described: The eastern and southeastern portions lie upon the western slopes of the Sierra de Zongolica, which constitutes a southern spur of the high coast-range; the southern and southwestern are occupied by a broad, bare range, running from the base of the great volcano of Popoca-tepetl southeastward, until it faces the coast-range near Tehuacan. The general dip of the country is to the south, and its surface in that direction is cut up into deep valleys or small basins.

¹ *Intendencia de Puebla*, p. 195, MS. in possession of Señor García-Icazbalceta.

² According to José M. García, *Ideas que se recopilan para la correccion de la Estadística y Geografía del País*, in *Boletín de la Sociedad Mexicana de Geografía y Estadística*, vol. vii. 1859, the population in 1838 was 661,902 (p. 139); in 1858, 655,622 (p. 120).

The climate is hot, and within the comparatively limited areas where there is sufficient moisture an exuberant vegetation flourishes. This is particularly the case in the southwestern part. The high ridges are barren, and their summits cool; so that a great variety of climates and products may be found within short distances.¹

The above described portions of Puebla comprise about five sixths of the whole area, leaving one sixth for its north-western division. This section is bounded on the east by undulating ridges, over which the volcano of Orizaba lifts its silvery cone. On the south the bleak tops of the cross range terminate the horizon. At the north looms the Malinche, dark and frowning, with its shaggy mural summit; to the northwest the view is closed by low, barren mountains, and on the west the two gigantic volcanoes of Mexico — the Yztac-cihuatl and the Popoca-tepetl in close proximity — tower to an immense height; for while the plain lies on an average 2,100 metres (or nearly 7,000 feet) above the level of the Gulf, their snow-clad tops rise respectively 2,700 and 3,300 metres (8,700 and 10,700 feet) higher. The city of Puebla itself is situated only 30 to 40 kilometres (20 to 25 miles) to the east of their base. The whole region forms a level basin enclosed within the long slopes of the two volcanoes and of the Malinche.

In elevation above the level of the sea, and in fertility of the soil, this upland plain compares very favorably with the valley of Mexico; but as it is traversed by only one inconsiderable stream, the Rio Atoyac, its water supply is scant. Although this is a serious disadvantage, compensation is to

¹ Maize is the great staple of Puebla. According to the *Estadística* of Emiliano Busto, in 1879, out of a total value of agricultural products of \$11,490,650, that of the Indian corn amounted to \$8,452,680. Of essentially tropical crops, the State in that year produced 5,250,000 kilograms (11,550,000 pounds) of sugar, and 468,960 kilograms (1,030,027 pounds) of rice.

be found in the circumstance that the climate, owing to the far greater dryness of the air, is much healthier.¹

This district, lying in the main little north of the nineteenth degree of latitude (which parallel passes through it a few miles south of the city of Puebla), enjoys the equableness of a tropical climate, tempered by the high altitude. Although that city lies 2,196 metres (7,203 feet)² and Cholula 2,104 metres (6,902 feet)³ above sea-level, even a light snowfall is of very rare occurrence. This, however, is due in part to the drought which characterizes the winter months of the year; for when I was at Puebla on the 7th of March, 1881, the patches of wheat about the Cerro de Guadalupe showed occasional traces of being frost-bitten. The warmest months are from April till June, but during that period my thermometer at no time rose, at Cholula or San Nicholas de los Ranchos, to above 29° Centigrade (84.2° Fahrenheit) in the shade. When the rains, which last from June till November, begin to fall regularly every day, the air grows cool, and the morning is almost always chilly; so that practically the summer months are the coolest of the year.

During the month of November the rains gradually cease, the air becomes dry and serene, and the giant volcanoes shine out in unparalleled splendor. The snow-fields below their summits, no longer fed by constant precipitation, begin to shrink, until the southern slope of the Popoca-tepetl is left almost bare. The snow-line therefore, in Mexico, is virtually higher in winter than in summer. Winter is not so much the cold as the dry season, and all of Nature that rests during that period sleeps the sleep of drought and not of frost.

¹ Typhoid fevers are endemic at Puebla as well as at Mexico; still they are far less malignant in the former. Intermittent fevers occur, but not frequently.

² Humboldt, *Essai politique sur la Nouvelle Espagne*, vol. ii. lib. iii. cap. 8, p. 158.

³ Humboldt, *Kosmos*, Band iii., 1858, p. 434; 6,480 French feet; lat. 19° 2'.

There is still enough vegetation left to give a green tint to the landscape. Fields of wheat and barley are to be seen, and hedges and rows of colossal magueys and columnar cacti, and groups of evergreen copal trees,¹ with slender, graceful foliage resembling that of the drooping locust, and thickets of opuntia, and large and stately ash-trees in full foliage, while the heavy pine forests of the *tierra fria* sweep up the slopes of the great volcanoes in dark masses. Although the exuberance of the later season is wanting, the Nahuatl Indian, struck by the annual change of vegetation much more than by astronomical phenomena, has called the year *xihuitl*, or "new green," and placed its commencement about the close of February or the middle of March.² Then the atmosphere begins to lose its transparency; high and parching south winds whirl clouds of sand over the plain, completely shrouding at intervals even the volcanoes. Clouds gather on the mountain tops as the day advances and occasionally overspread the sky; sometimes faint mutterings of distant thunder are heard. When on the next morning the sun rises clear and bright from behind the peak of Orizaba, it shines upon freshly fallen snow on the summit of the Malinche, which soon melts away as the day advances. Gradually, however, the clouds sink to lower levels, and in the afternoon showers of hail, often of considerable violence, sweep around the base of the Sierra.

¹ *Schinus molle*.

² The beginning of the Mexican year is variously stated. Mr. H. H. Bancroft, *Native Races*, etc., vol. ii. p. 508, has carefully compiled a table from twenty-one authors, indicating the epoch as stated by each author. Gama alone places it on the 9th of January, all the others between the 2d of February and the 10th of April. To this list I would add the weighty statement of Fray Juan de Tobar, *Código Ramirez*, trat. ii. p. 123: "Era el año del mismo número que el nuestro, y de ordinario comenzaba por Marzo, que es cuando reverdecen las plantas con nuevas hojas; por cuya causa llamaron al año *xihuitl*, que es el nombre de las hojas verdes, y á la rueda llamaban *Toximolpilli* y *xiuhtlapili*, que quiere decir una atadura de hojas verdes, conviene á saber de años."

In April and May the first thunder storms descend into the plain ; but they are only occasional until June, from which time onward they become of daily occurrence. Every noon the sky lowers, rain clouds drift majestically from the mountains across the table-land, and sometimes two or more storms are visible at once. Whenever these meet, the rain pours in torrents for an hour or more, accompanied by fierce and often dangerous electric discharges and but very little wind. As a rule the night closes in with a gentle, quiet downpour of cooling rain. The "season of waters" (*estacion de aguas*) has now fairly set in ; and in the early morning, when the sky has again become clear and limpid, the eye ranges over a landscape of wonderful distinctness, exhibiting everywhere in its freshly springing foliage the magic effect of the rains.

We need not wonder that such a region as this northwestern corner of the State of Puebla was, at an early date, colonized by Spanish immigrants settling alongside of the numerous Indian pueblos which had occupied it for a long period before the Conquest. Its present political divisions are characteristic as well of this immigration as of the aboriginal occupation of the soil. The region embraces four districts: Puebla (which represents the Spanish settlement), and Cholula, Huexotzinco, and Atlixco, — each of which constituted at the time of the Conquest an independent tribe of Nahuatl-speaking Indians. The population in the year 1878 was: Puebla, 72,029; Cholula, 32,178; Huexotzinco, 31,796; total, 136,003.¹ Adding to these numbers between 30,000 and 40,000 for Atlixco, the census of which I failed to obtain, we find one fourth of the inhabitants of the State occupying one sixth of its area.

It has been impossible for me to secure any recent enumeration of races ; but in an original manuscript to which there

¹ Busto, *Estadística, etc.*, pp. li. and lii.

is appended no date¹ (although it evidently belongs between 1787 and 1800) I find the following numbers given: district of Puebla, — Spaniards, 19,532; Indians, 18,940; mixed, 18,387; total, 56,859. This shows a percentage of about thirty-five per cent of pure white blood, and about thirty-three per cent of pure Indians. In the other districts the proportions are quite different.

	Whites.	Indians.	Mixed.	Total.
Cholula . .	1,778	19,402	1,120	22,300
Huexotzinco .	2,165	16,253	4,161	22,579
Atlixco . .	4,990	23,368		28,358
Totals . .	8,933	59,023	5,281	73,237

In them the whites represent twelve per cent, the Indians about eighty per cent, of the whole population; whereas taking all four districts together, there would be about twenty-two per cent of whites and sixty per cent of pure Indians.

I place some importance upon these figures for the reason that it has been stated that Puebla, like Cholula and other towns, was an ancient Indian site. Such is not the case. Puebla, like Atlixco, was founded and built on unoccupied soil, far from any then existing Indian settlement.

The ground on which the city stands, west and southwest of the small rivulet of San Francisco, bore the Indian name of Cuetlaxcoapan.² Various etymologies have been given

¹ *Intendencia de Puebla*, MS. in possession of Señor García-Icazbalceta. Humboldt, *Essai politique* etc., vol. ii. lib. iii. cap. viii. p. 155, gives statistical data of the year 1793, which, in general results, are identical with those of the manuscript named. I am therefore inclined to believe that the latter relates to that year.

² The earliest mention of this name I find in Motolinía, *Historia de los Indios de Nueva-España*, MS. in the splendid collection called *Libro de Oro y Tesoro Indico*, belonging to Señor García-Icazbalceta, — "Vicilapan y á Cuetlaxcoapan, que es á do agora está la ciudad de los Angeles" (p. 11); "Unas veces diciendo Cuetlaxcoapan; entónçes quieren decir el sitio de la ciudad, y otras vezes dicen Vicilapan; hase de entender aquella parte del arroyo á San Fran-

for this word, all more or less learned, but an intelligent and well-informed Indian, Don Pedro Flores, chief magistrate of the pueblo of Coronanco, assured me that it means simply, "place where they washed hides." Other natives subsequently confirmed this interpretation. This does not quite agree with the statements of Vetancurt,¹ who says that the word signifies "place where they washed intestines." On the strength of this latter etymology Puebla has been supposed to have been anciently a great place of sacrifice. There is not the slightest evidence of this. On the hill of San Juan Centepec, about 3 kilometres (2 miles) west of the city, and south of the carriage road to Cholula, there are said to exist slight remains of antiquity, — and also to the south of the same eminence, near the Rio Atoyac. But although a few objects fabricated by the aborigines may have been dug up on the site of Puebla, no trace of any settlement has ever been found. The mention made of Cuextlaxcoapan in older documents is very slight and obscure. All we can gather is that the site lay waste at the time of the Conquest, and was regarded as coming within the range of the tribe of Cholula.

After the capture of the pueblo of Mexico, Tlaxcala became, next to the young city itself, then growing up on the ruins of the former aboriginal capital, the most important point. In 1527 it received its first bishop, Don Fray Julian Garcés.² It is stated that he fixed upon the site for a Spanish settlement" (p. 249). The manuscript has no title, but it is, in many respects, much more detailed and complete than the printed *Historia*, etc. In order to distinguish the two I shall hereafter cite each as follows: Motolinía, *Libro de Oro* MS.; and Motolinía, *Historia*, etc., — always referring by the latter to the work published in vol. i. of *Coleccion de Documentos*.

¹ *Teatro Mexicano*, edition of 1871, vol. ii. pp. 361, 362. He gives various etymologies besides.

² Vetancurt, *Teatro Mexicano*, vol. ii. cap. iv., "Tratado de la Ciudad de la Puebla de los Angeles," p. 371.

ment within convenient distance of both Tlaxcala and Cholula, where Puebla now stands.¹ One of the few thoroughfares existing in the country passed near by; and two Spaniards, Estéban de Zamora and Pedro Jaime, had established a small trading-house on the otherwise unoccupied spot, as well as a blacksmith's bench, for the accommodation of occasional travellers.² In their letter, dated 30th of March, 1531, to the Empress, the *Oidores*, Salmeron, Maldonado, Ceynos, and Quiroga state that they had selected the site "two leagues from the city of Cherula (Cholula), where there is very good land, in such parts as not to injure any Indians."³ Several reasons prompted the Spaniards to desire to have a settlement of their own in this region. In the first place, the most powerful tribes of the Mexican table-land were then in the exclusive occupation of it; and it was advisable that a strong Spanish post should be established in their neighborhood, under the disguise of a peaceable town, which would serve at the same time as a useful station between the young City of Mexico and the coast. In the second place it could not fail to strike the Spaniards that the climate and soil of the country were well adapted to the culture of European cereals

¹ Fray Juan Villa-Sanchez, *Puebla Sagrada y Profana, Informe dado á su muy ilustre Ayuntamiento el año de 1746*, published in 1835 by Francisco Javier de la Peña, p. 13. Motolinía (*Historia*, etc., trat. iii. cap. xvii. p. 231) attributes its foundation "á instancia de los frailes menores, los cuales suplicaron á estos señores, que hiciesen un pueblo de Españoles, y que fuesen gente que se diesen á labrar los campos y á cultivar la tierra al modo y manera de España, porque la tierra habia muy grande disposicion y aparejo; y no que todos estuviesen esperando repartimientos de Indios." The letter of the "*Oidores*," Salmeron, Maldonado, Ceynos, and Quiroga (published by García-Icazbalceta, *Don Fray Juan de Zumárraga*, etc., apéndice, pp. 252-257) says nothing of either.

² Villa-Sanchez, *Puebla Sagrada y Profana*, p. 16. There was then *una vecicilla* kept by Estevan de Zamora and Pedro Jaime (the latter a blacksmith), "en el lugar endonde hoy son los mesones llamados del Roncal y del Cristo."

³ *Carta á la Emperatriz*, 30 March, 1531, in Zumárraga, appendix, p. 257, "do hay tierras muy buenas, en parte do no se hace perjuicio á Indios."

which, until then, had to be imported at great cost.¹ Spanish settlers might naturally turn their attention to raising wheat, and by their example the Indians might be taught to do the same thing; and thus gradually systematic agriculture would be introduced in place of the desultory horticulture heretofore exclusively practised. The application for the right of founding a city was therefore received with favor by the Spanish crown; and on the 28th of September, 1531, a royal grant was issued establishing the City of the Angels (*la Ciudad de los Angeles*), now the city of Puebla de Zaragoza.²

It was on the 16th of April, 1532, that Fray Toribio (Motolinía) performed the act of formally blessing the newly erected huts and the site for the church of Puebla.³ Thirty-three building-lots (*solares*) had been set off to as many original colonists who composed the population. The friars of the Order of St. Francis had control of spiritual affairs, and by their influence the Indians of the surrounding pueblos had been brought to assist the colonists voluntarily. One hundred and sixty Indian hands had originally helped in the construction of the first humble thatch-roofed houses. When these were consecrated, a large number of the natives gathered to participate in the ceremony, and as some of them came to settle near the town they gradually formed Indian pueblos like Amozoc in its vicinity.⁴

¹ Salmeron, Maldonado, etc., *Carta*, etc., in *Zumárraga*, p. 252 of appendix. Motolinía, *Historia*, etc., trat. iii. cap. xvii. pp. 232, 233.

² Humboldt, *Essai politique*, etc., vol. ii. lib. iii. cap. viii. p. 158.

³ Villa-Sanchez, *Puebla Sagrada y Profana*, p. 17. Motolinía (*Historia*, etc., trat. iii. cap. xvii. p. 232) says 1530; but this is an evident slip of the pen of the ecclesiastic who himself blessed the new site. It is not possible that the place could have been built before the legal concession was made, and the date of the *merced* settles the question.

⁴ According to Villa-Sanchez, *Puebla Sagrada y Profana* (p. 17), three hundred and twenty Indians assisted in building the huts of the first Spanish settlers.

Many privileges were granted to the churches of the city. Thus, according to an act of the 29th of August, 1536, the Indians of the pueblo of Calpan, situated at least 27 kilometres (18 miles) west of Puebla, had begun to build a church of stone in the new town; and on the 20th of July, 1538, the Queen of Spain confirmed to the municipality of Puebla the right to compel these Indians to continue the erection of the said building, allowing them in compensation a large diminution of tribute.¹ All this is further evidence of the fact that the site of Puebla and its neighborhood were unoccupied at the time of the Conquest.

The growth of Puebla is best shown by figures:—

In 1532 it began with original settlers (whether with or without families is not stated) to the number of . . .	33
In 1571, it contained (besides 200 Indian houses), of Spaniards, somewhat more than ²	500
In 1678 (adults, capable of communion) ³	79,800
In 1746 ⁴	53,066
After 1787 and previous to 1800 ⁵	52,717

Motolinía (*Historia*, etc., trat. iii. cap. xvii. pp. 232, 233) mentions only those Indians who assisted at the festival of the blessing of the new settlement. The *Relacion particular de toda la Provincia del Santo Evangelio, que es de la Orden de Sant Francisco en la Nueva España, y los límites della, hasta donde se extiende, y de todos los monasterios de la dicha Orden que hay en ella, y el número de frailes que hay en cada monasterio*, etc., a manuscript belonging to Señor García-Icazbalceta, of the year 1571, says, in regard to the Indian population of Puebla and of its surroundings: "No tienen cargo de pueblos de Indios, porque aquella ciudad se fundó en tierra despoblada dellos, aunque despues que los Españoles hiciéron allí su asiento, se han allegado y avecindado fuera en los arrabales, algunos que han venido de los pueblos comarcanos" (p. 24).

¹ *Libro Segundo de la Fundacion é Historia de la Ciudad de Puebla*, manuscript attributed to Veytia, in the Museo Nacional of Mexico, cap. i. (no paging).

² *Relacion particular de toda la Provincia*, etc., MS., A. D. 1571, p. 24.

³ Villa-Sanchez, *Puebla Sagrada y Profana*, p. 38. He relies upon the statements of Don Miguel Zeron Zapata: "Sesenta y nueve mil ochocientas personas adultas capaces de comunión."

⁴ *Ibid.*, p. 38.

⁵ *Intendencia de Puebla*, MS.

About 1808 (according to Humboldt) ¹	67,600
In 1852 (according to Almonte) ²	71,631
In 1878 (official statistics of the federal government) ³	68,634

These figures, like most statistics of population, do not deserve absolute credit; still they are instructive. They are sufficiently trustworthy to justify us in dividing the three and a half centuries of the existence of Puebla into three periods:—

1. Fifty years of slow progress and little growth.
2. One hundred years of development unequalled, perhaps, during the seventeenth century.
3. Two centuries of stagnation.

That the new settlement did not grow rapidly during the first half-century of its existence is not surprising. It passed, while still young and feeble, through the terrible ordeals of the epidemics of 1545 and 1576; but after the last named plague its development was remarkably rapid. Its industries prospered. The Church, while insisting, perhaps too much, upon outward display and unprofitable expenditure in architecture, was a great employer of labor and creator of fixed wealth; and at the same time it founded institutes of learning, of whose treasures, left intact by civil wars, I have often gratefully made use. The name of Don Juan de Palafox y Mendoza, ninth bishop of Puebla, stands foremost in connection with almost every improvement made during that flourishing period. The subsequent decline and stagnation of the city were mainly due to the unfortunate policy of isolation adopted by Spain towards its colonies. This isolation did not so much affect the Indian, who was always fairly protected in

¹ *Essai politique*, etc., vol. ii. p. 158.

² *Boletín de la Sociedad Mexicana de Geografía y Estadística*, vol. vii. 1859. José M. García, *Ideas que se recopilan para la corrección de la Estadística y Geografía del País*, p. 120.

³ Emiliano Busto, *Estadística*, etc., p. li.

his limited aspirations, but it weighed down the Spanish immigrant in his attempts to create a domestic industry for Mexico. It is absolutely incorrect to suppose that the Spaniards settling on Mexican soil were nothing but mere booty-seekers and ruthless adventurers. As soon as the commotion of the Conquest was over, the men of "sword and cape" were gradually supplanted by tillers of the soil and by mechanics. These, as the figures show, rapidly prospered. But while the colonies rose, Spain itself began to decline, and, in proportion as it fell, became more and more avaricious of the resources of the former. By excluding Mexico from all foreign intercourse it ruined the future of its own children on Mexican soil; and Puebla, as a Spanish city, suffered heavily in consequence. To these causes of its decline must be added two epidemics, — the *sarampion*, of 1692, and the *matlazahuatl*, of 1737.¹

I shall not undertake to discuss the reasons why Puebla has advanced so little during this century, — they belong to a period the history of which cannot yet be written; but there is every hope that the era of peace, now at last begun in Mexico, will become, for the beautiful "City of the Angels," an era of prosperity recalling the early centuries of its existence.

It may be objected that discussions like the foregoing are foreign to studies whose purpose is strictly archæological; but I have felt that, in this particular instance, such a digression was indispensable. A confusion has always existed, in regard to the past of Mexico, between the known and the conjectured. Too many productions of historical times have been unreasonably assumed to be, in part at least, relics of an unknown past. It is therefore important, in every special case, to establish first what belongs clearly to authentic history,

¹ *Puebla Sagrada y Profana*, pp. 41, 63.

and then to pass on to the investigation of archæological facts. The result, if any, will be to transfer phenomena, heretofore assumed to belong to the latter class, to the domain of the former.

I turn now to the district of Cholula, where for four months of my stay in Mexico I made my headquarters among its kind and friendly inhabitants.

The Rio Atoyac forms the dividing line between Puebla and Cholula, and the western boundary of the former. It takes its source on the slopes of the Yztac-cihuatl, running nearly due east until north of the pueblo of San Lorenzo Olmecatlan;¹ then bends to the south past Puebla, traversing the whole State in a winding course, and finally empties into the Rio Zacatula, in the State of Guerrero. The Atoyac is a shallow stream which, reduced to a narrow fillet in winter, often becomes a turbid mountain-torrent in summer,—particularly between Puebla and Cholula, where both of its banks are steep and rocky, with an occasional interval of timbered bottom-land. About 2 miles (3 kilometres) due west of the former city, a fine bridge of hewn stones, called Puente de México, crosses the river. Until the railroad now in construction towards Matamoras-Yzúcar is finished, the tramway connecting Cholula with the State capital will continue to pass over the bridge. This structure was built in the second half of the sixteenth century.²

¹ Various written Olmecatlan, Almecatlan, Amecatlan. The word may be significant, and apply to the so-called Olmecas, who are reputed to be the founders of Cholula. See *La Pirámide de Cholula*, in vol. iii. of the *Museo Mexicano*, 1844, Note 2.

² Gabriel de Rojas, *Relacion de Cholula*, 1581, MS., p. 15: "Es rio mediano y que se vadea por muchas partes, sobre el cual está una buena puente de solo un arco en el camino que viene de la ciudad de los Angeles á México, que se llama la puente de Cholula." The little *tienda*, kept now on the right bank near the bridge, dates from a concession to Miguel Mendez, dated 14th October, 1634. Archivo General, *Mercedes*, vol. xxxix. fol. 186.

Large cotton-factories and mills line the northern bank of the river, all driven by water-power except one, which is run by steam. Hundreds of Indians find occupation in these establishments, which have gradually supplanted the hand-loom of former days, which was once to be found in almost every house of the pueblos of Cholula. There are also large flour-mills, and occasional picturesque ruins marking the sites of early manufactories.¹

On account of the well-known predilection of Indians for the neighborhood of water-courses, I hoped to find aboriginal remains along the river. In the vicinity of the Puente de México, the owner of the *venta*, Don Trinidad Lopez, kindly acted as my guide; but, although there are ruins, they invariably contain red brick, which is a sure indication of their Spanish origin. There may be older remains beneath, but excavations would be necessary to prove this. We know, as yet, so little of the surface of Mexico through systematic archæological explorations, that subsoil investigations, although desirable, might not necessarily lead to reliable deductions. My ramblings with Señor Lopez, however, made me acquainted with the very ancient aboriginal mounds of San José del Rancho Viejo. Although not immediately on the bank of the river, its neighborhood accounts naturally for their position. I have already alluded to the remains which are said to exist beyond the hill of Centepec, on the eastern or Puebla side of the Atoyac. North of the bridge the district of Cholula still claims a small territory on the same bank. This tract is traversed by low ridges, and on

¹ In the Archivo General of Mexico I found a concession for a "mill and fulling-mill" (*molino y batan*) as early as 1576,—*Merced á Augustin Villanueva*, *Mercedes*, vol. x. fol. 145; and, in vol. xv. fol. 70, *Merced al Hospital de convalecientes de Cholula*, for a similar establishment, in 1589. The so-called Molino de San Diego, north of Cholula, dates back to the *Merced á Rodrigo Mendez del Castillo*, 24 July, 1608,—*Mercedes*, vol. xxvi. fol. 75.

some of them artificial mounds occur. Near the western bank, opposite to the place mentioned, the superintendent of the hacienda of San Domingo, Don José dela Luz Madrid, told me that low mounds had been explored which yielded much ancient pottery, as well as stone slabs for grinding grain (*metlatl*, or *metates*), and other articles of daily household use. Close by, a number of skeletons were unearthed. It thus appears that the river-banks on both sides were inhabited at certain localities in former times, at least south of the bend which I have already mentioned as near San Lorenzo Olmecatlan; but no considerable settlement seems to have existed beyond the one of San José del Rancho Viejo, of which I shall hereafter speak. This is explained by the simple reason that the fertile lands properly begin at some distance west of the river itself. At all events the aborigines, whose remains we have noticed, were a mound-building, pottery-making people, and probably given to horticulture. Whether these settlements were simply outskirts of the central pueblo of Cholula, or villages belonging to another age and another stock, it is impossible to decide. There is no doubt, however, that when the Spanish Conquest took place both banks of the Atoyac were regarded as belonging to Cholula.

After crossing the Puente de México, and rounding the cultivated knoll on which the mounds of San José del Rancho Viejo stand, the plain of Cholula proper comes into full view. It is nearly level, with a very gentle rise to the north and a decline to the south, and it terminates to the west at the long slopes of the volcanoes. The district of Cholula extends up to the very top of the Popoca-tepetl, and includes part of the southern crest of the Yztac-cihuatl. The inhabited portion of it, however, is principally the plain itself, with the exception of a few pueblos built at the base of the high peaks, like San

Lucas Atzala, San Mateo Ozolco, San Andrés Calpan, Santiago Xalitxintla, and San Nicolas de los Ranchos. It must be noted that these villages have been but recently added to it, having formerly been under the jurisdiction of Huexotzinco. The southeastern corner, embracing Santa Clara Ocoyucan and San Bernardino Chalchihuapan, runs partly into the central mountain-range of the State. The most recent census of the district, made by Don José Maria Reyes Ramirez in 1880,¹ gives to the whole district a population of 35,334. It is divided into seven municipalities:—

In the north: Coronango,	11 pueblos	5,652 souls
In the west: San Andrés Calpan,	3 „	3,387 „
San Nicolas de los Ranchos,	3 „	3,596 „
In the southwest: Santa Ysabel,	9 „	4,282 „
In the south and southeast: Ocoyucan,	5 „	3,602 „
Centre and east: San Andrés Cholula,	7 „	4,205 „
San Gabriel Cholula,	13 „	5,089 „
The latter municipality contains, besides, the city of Cholula with		
		5,521 „
Total		35,334
In all: 1 city, 51 pueblos, 30 haciendas, and 21 ranchos.		

At least three fourths of the inhabitants are Indians speaking the Nahuatl language, no other aboriginal idiom being permanently represented in the district. It will be noticed that the north, east, and centre, which are the most level sections, contain together 20,467 inhabitants, or fifty-eight per cent of the whole population. If we subtract from the total the two western sections, added but a short time ago, it increases the proportion to about seventy per cent of the inhabitants of the original district of Cholula.

Agriculture forms the main occupation of the people. According to official statistics of 1879, Cholula raised in that

¹ *Estadística Geográfica del Distrito de Cholula*, MS.

year, agricultural products to the aggregate value of \$566,760.¹ About three centuries ago, cochineal was a staple product of the region, but its culture was gradually abandoned, like that of cotton. The *maguey* is extensively cultivated, though the pulque is of that repulsive kind named *caliente*, and the leaves of the great Agave supply the lack of firewood. Except on the slopes of the volcanoes, there is little timber in the district.

Although actually very level, even the plain of Cholula has variations of climate within short distances. Slight depressions produce, at such high altitudes, local differences shown in the growth or absence of certain plants, the ripening or not ripening of certain fruits.

The methods of agriculture still conform more or less to those of former periods. Owing to the concentration of rainfall within about five months of the year, artificial irrigation is largely resorted to. The snowfields of the Yztac-cihuatl afford the chief supply of water for the plain of Cholula. The innumerable fillets of limpid water trickling down its declivity converge to a few streams which, mainly through the dark *barranca*, near Calpan, burst into the open plain where they seem gradually to disappear in the soil, but not until some of the water has been led into conduits by which it is distributed over the arable ground.

About the middle of March the fields are regularly irrigated, and when the ground has become well soaked, ploughing begins. The soil of the plain is a volcanic detritus, sandy-looking and very productive. The uncouth plough imported by the Spaniards three centuries and a half ago still does fair service. Drawn by a pair of stout oxen, harnessed by the horns, it

¹ Among these were maize, 18,278,240 kilograms; wheat, 1,491,000 kilograms; barley, 1,775,000 kilograms; beans, 761,120 kilograms; red pepper, *chile*, 193,080 kilograms; and potatoes, 102,000 kilograms.

readily furrows the light sod. It has but one handle, and the driver uses his right hand to wield a long iron-pointed goad.¹ (Plate X. Fig. 1.) During the last days of March the white corn is put into the ground, and in the latter part of April the yellow and blue corn is planted, and about the same time also beans and gourds. After planting, irrigation ceases, and the crops are left to grow, with occasional weeding, until the close of the rainy season in November, when the maize is gathered. On the other hand, wheat and barley are sown in November, and they are harvested from the close of April to the beginning of June. In some parts of the plain the wheat was fully ripe on the 20th of last April. Thrashing is mostly done with horses and mules, and the sickle is still largely used for reaping.

In the western portions of the district² some cultivable fields are found upon the slopes of the volcanoes, and even within the limits of the forest on its sides, in localities where irrigation is not possible. These higher regions enjoy a rainfall more or less throughout all the year. On the heights around the pueblo of San Mateo Ozolco, northwest of San Nicolas, I saw wheat-fields and blooming *maguery* in May. The elevation above sea-level is about 2600 metres (8000 feet), yet the crops do not vary so much in kind as in time of maturity.³

¹ American ploughs are coming into use now, but the natives cut off the right handle, holding the implement by the left hand only. I have also seen riding-ploughs; and at Panzacola, about 4 kilometres (2½ miles) northwest of Puebla, agricultural implements are manufactured after North American patterns.

² The municipalities of Calpan and San Nicolás de los Ranchos.

³ The drinking-water for Ozolco is carried up from a deep and precipitous *barranca*, beyond the fields, by women. It forcibly recalls the Potreritos, on the west side of the Rio Grande in New Mexico, where of old the pueblos were supplied with water daily from cañons with almost vertical sides, and hundreds of feet below the surface. Such are the Potrero Viejo, the Potrero de la Cañada quemada, the Potrero de en el Medio, and others.



Fig. 1.



Fig. 4.



Fig. 5.



Fig. 6.



Fig. 7.

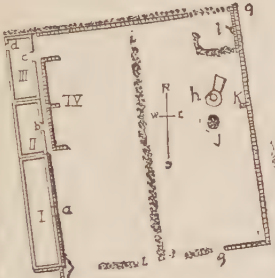


Fig. 2.



Fig. 3.

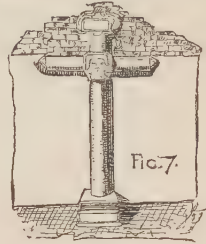


Fig. 8.



Fig. 9.



Fig. 10.

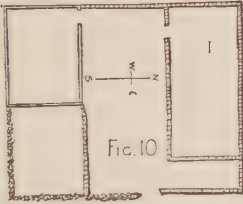


Fig. 11.



Fig. 12.



Fig. 13.



Fig. 14.



Fig. 15.



Fig. 16.



Fig. 17.



Fig. 18.



Fig. 19.



Fig. 20.

In the same district an industry has been preserved which, though it has obtained a wider scope since the Conquest, still antedates that period. It is the hewing, out of the dark-gray volcanic rock called *tetzontli* ("hairstone"), of the grinding-slabs, *metlatl*, found in every Mexican house. This rock comes from the *malpais*, or lava-bed, which begins south of San Nicolas de los Ranchos, beyond the mountain stream called by that name. It lies about the foot of the Popocatepetl like a rugged platform, deeply cleft, with a few ridges and isolated peaks such as the Cerro de Tecuahuitecoya and Cerro de Tetlyollotl, rising above it, in advance of the giant that towers in their rear.¹ Thickets of oak, holly, and occasional coniferæ are scattered over its corrugated surface. The *malpais* is well defined only around the great volcano, while the sides of the Yztac-cihuatl run out in massive plateaus. At a short distance from San Nicolas the lava is quarried with iron sledges and crowbars, and brought on donkeys in convenient blocks to the pueblo of whose population many are stone-cutters. By steel picks of various sizes, these blocks are hewn into the three-legged *metlatl*, or its long, pointed crushing-pin,—the *metlapilli* or *son of the metlatl*. From early morning the click of the hammers is to be heard in the pueblo: A plain, full-sized *metlatl* sells for 18 $\frac{3}{4}$ cents, and a *metlapil* for one third of that price. These useful articles are carried on the backs of donkeys to Puebla for sale,—a distance of about 30 kilometres (20 miles). The *metlatl* of to-day is always flat, and the *metlapilli* is long, pointed at both ends, and generally four-sided. The *metlatl* of old was con-

¹ Humboldt (*Kosmos*, vol. iv. pp. 348, 349) describes particularly the *malpais* between San Nicolas de los Ranchos and San Buenaventura, but does not speak of any vegetation. This is significant. I have the thickets of oak and holly, which I have traversed on foot for hours,—sometimes in peril from robbers,—grown since 1804?

cave ; and its crushing-pin either long, cylindrical, and heavy, or flat, like those of the New Mexican pueblos.

I have always seen the grinding-slab standing upon legs, and all made of one stone ; and nowhere have I met with frames such as those into which the Indians of New Mexico set their hand-mills.

The metlatl is occasionally, though not often, adorned with simple figures, and its surface is always left rough, or rather picked with a sharp tool like a mill-burr ; but this intentional roughing is not so elaborate as the dressing of a mill-stone. Besides the corn-grinder, pepper-mortars are also made of lava. They are three-legged and hollow, with a spout. Dressed slabs of stone, *lajas*, used for building purposes, are also manufactured at San Nicolas de los Ranchos.

Although the inhabited parts of the district of Cholula, as already stated, do not extend further west than the pueblo of Santiago Xalitzintla, the slopes higher up, and even the very summit of the volcano, are the seat of three peculiar industries. These are charcoal-burning, turpentine-gathering, and sulphur-mining ; and none of them antedates the Conquest. The burning of charcoal about the Popocatepetl takes place almost exclusively in that region called the Monte, among the extensive forests of pines which ascend from the lava-beds to the limits of tree vegetation. As it floats along the sides of the volcano, the smoke from the smouldering charcoal pits might be mistaken for that of solfataras, of which, however, there are none outside of the crater.¹

¹ The charcoal is packed into crates and brought into Puebla for sale, sometimes on donkeys, sometimes on the backs of men. A good deal of it is also sold in the pueblos of the plain, where it supplies the place of both firewood and maguey leaves for cooking purposes in those houses, where the pigeon-holed range is used in place of the common Indian hearths.

The gathering of turpentine is mostly confined to the Monte of the Yztac-cihuatl, and therefore is mainly done in the district of Huexotzinco.¹

The crater of the Popoca-tepetl is a valuable mine of native sulphur. Its vast cup has a diameter of nearly 800 metres (about one half an English mile), with such precipitous sides of varying heights, that it is considered impossible to descend into it unless by means of a rope and crane. These are used whenever sulphur-digging goes on, and a rope of enormous length is said to be required. The laborers pass the night at the foot of the summit, mostly on the western side, and go up every morning before day-break.² It is known that only a few years after the Conquest mining of sulphur was attempted in Mexico. It was, however, soon abandoned, and it is only of late that it has been systematically resumed. Before the Conquest, the natives never ventured near the summit of the mountain.

Ice, or rather snow, is brought to the plain, chiefly from the Yztac-cihuatl, whose snow-fields are more extensive and of firmer consistency than those of its loftier neighbor.

¹ The full-grown Ocotl (*Pinus variabilis*) is selected for this purpose. About one metre above the soil the bark and wood are cut obliquely upon one side of the tree, so as to leave an incision beneath like a step. This step is hollowed out to a bowl (*pozó*), and in it the liquid resin of the tree collects. Every eight days an Indian empties the bowl into a tin can, and brings the whole to one of the places where the necessary machinery for distillation and refining is kept.

² The sulphur when quarried is packed in mats, *petates* of four *arrobas* (46 kilograms = 101 lbs.) each, and hoisted up by the crane, and when about twenty-five such mats have been raised, they are all tied together by a rope. An Indian squats down on the snow, making a seat or cushion of his *zarape*, and then, taking in his hand the lower end of this rope, he slides down the great cone of snow with great velocity, drawing after him the string of mats. For the digging and hoisting he is paid eighty-seven and a half cents per mat. At the Rancho de Tlamacaz, a cluster of wooden buildings lying on the northern slope of the volcano, near the limits of tree-growth, the sulphur is distilled in iron retorts, and is then ready for market.

Humboldt has called attention to the fact that the volcanoes of Mexico rise on a line extending almost due east and west from the Gulf to the Pacific Ocean, as if they had started up along a great transcontinental fissure.¹ If such is the case, then the volcanic system of which the Yztac-cihuatl is the northern, the Popoca-tēpetl the southern summit, forms a cross-range or spur running at right angles to the main rent. Both of the great eminences were thrown up on the crest of this range. This becomes very apparent if we compare the appearance they present from the east, or Cholula side, with that from the territory of Chalco, in the valley of Mexico, in the west. While from San Mateo Ozolco, for instance, the Popoca-tēpetl rises with an unbroken slope sweeping up gracefully and uninterruptedly to the snow-clad top, the same mountain, as seen from Amecameca, which lies nearer to its base, and is 2,480 metres (8,135 feet) above sea-level, shows a short cone of eruption set upon the steep slopes of its foundations. The Yztac-cihuatl is far more massive than its conical neighbor, but from the east it descends first in rocky steps, then in wooded swellings; while from the west its long icy crest appears strikingly like a woman in a white shroud lying on her back upon a steep-sided platform. Therefore the name, signifying "white woman," was given to it on the western side, in the valley of Chalco; whereas at Cholula it was formerly called Yztac-tēpetl ("white mountain"), in contradistinction to Popoca-tēpetl ("smoke mountain"), as the active volcano was always styled. (Plate VIII.)

The Popoca-tēpetl has its skeleton formed of dark porphyritic and basaltic rocks, while all its ribs and protuberances are covered over, and smoothed down by an enormous deposit of volcanic scorix, to which is due the regular form of the peak.

¹ *Kosmos*, vol. iv. p. 312. - The four highest volcanoes of Mexico lie on a line from east to west, between latitude 18° 59' and 19° 20'.



YZTAC TEPETL OR YZTAC-CHIHUATL.—THE WHITE WOMAN. FROM THE EAST

From the east, as already stated, the unbroken cone seems to rise much higher than from the west. The limits of vegetation, which include the so-called Monte, reach to about one half of the height of the mountain, or nearly 3,800 metres (about 12,500 feet). Above this the slopes are composed of dark-gray or dirty-red volcanic sand, with few crags and rocks protruding. Some 500 to 1,000 metres (1,600 to 3,300 feet) higher, begins the constantly varying snow-line, above which eternal snow covers the final slope of the volcano wherever the steepness of the skeleton is not too great to permit its lodging.

The Monte of the Popoca-tepetl is a vast forest of pines of various species. The *aziomatl* grows beneath the trees in high tufts covered with yellow blossoms, but the *cacti*, so common in the plain, gradually disappear. On the steeper slopes, a high, stiff, and sharp reed-grass grows in profusion. In the southern portions I noticed among the dark-green pine-boughs, the variegated *nemalhuastli*, whose bright-colored blossoms shone out of the emerald-green foliage. Deer, turkey, rabbits, even an occasional puma, haunt the Monte, but only two or three ranchos reveal the permanent abode of man. Charcoal-burners, travellers going to and fro between the two slopes of the volcanoes, and suspicious characters from the villages themselves, are the only persons met with in this high and delightfully cool wooded region.

The slopes of the Popoca-tepetl towards Cholula supply no such innumerable fillets of water as stream down the sides of the Yztac-cihuatl. A few mountain torrents gush down through the forests towards Atlixco; but there are no murmuring brooks, no clear and cool rivulets. For the district of Cholula the volcano affords no water-supply, all its drainage flowing to the south.

While journeying from Santiago Xalitizintla, towards the

Rancho of Tlarnacaz, the traveller has the summit of the volcano always on his left. The steep pyramid gradually turns into a monstrous dome or flat cupola, called by the Spaniards by the significant name of "the half-orange." It almost fills the entire southern sky,—a dark-gray white-capped hump, whose chilly neighborhood is oppressive.

The Popoca-tepetl has been ascended so often of late that I may well dispense with the details of a tedious, but not in the least degree dangerous, journey. When I stood on the brink of the crater,—a yawning caldron in which the smoke of the three solfataras mingled with whirling clouds,—the thermometer indicating 10° C. (52° F.), not only was the sky overcast, but we were in the midst of a regular snow-fall. Nobody was working in the crater at the time, and the crane had been removed; and as it was impossible in the dense fog to think of reaching the Pico-mayor, or highest point, which stands about 160 metres (about 525 feet) above the southeastern brink of the crater, I reluctantly turned back. Every outlook was cut off by clouds. In an hour we retraced our steps down the slope, and when, near the barranca of Uiloac, we reached the limits of vegetation again, the sun broke through the clouds, and the great volcano soon cleared, its outlines shining in bright and tantalizing distinctness.

I have already alluded to the shape of the summit of Popoca-tepetl. From Puebla it looks conical, because the Pico-mayor stands behind the crater. (Plate IX.). As seen from the north, the profile is apparent. Previous to the year 1664 that profile was probably different, inasmuch as an elevation, similar to the western, stood over the eastern rim of the crater. It fell during that year, causing such a commotion, that at Puebla "the whole city was startled, doors and windows opened at the shock, and the ceiling of the staircase of our convent fell down." Thus



POPOCATEPETL, FROM PUEBLA, LOOKING WEST

writes a contemporary, the Franciscan Fray Augustin de Vetancurt.¹

It has been positively stated to me by geologists that the Popoca-tepetl has had no eruption for centuries, which may be true so far as the emission of lava is concerned ; but Sahagun, speaking of the so-called Toltecs, mentions a volcanic eruption, though the mountain, from which it is said to have occurred, is difficult to identify.² Torquemada twice describes the appearance of a giant with long thin arms, with which he embraced and smothered the doomed Toltec tribe. This spectre was followed by a white child seated on the top of a very high mountain, from whose putrefied head fetid gases spread over the country.³ If this be the myth of a volcanic eruption, it may have reference to the Popoca-tepetl.

It is certain, however, that at the time of the Conquest the volcano was in active operation, emitting smoke and throwing out rocks⁴ with loud detonations. The smoke disappeared in 1528 ; but in 1540 an eruption began with such force that the pueblos at the base of the mountain were dismayed by the subterraneous roar preceding and accompanying the outburst. The ashes or cinders covered the ground for many leagues around, and were carried as far east as Puebla, northeast as Tlaxcala, while to the northwest they fell at a distance of 15 leagues (38 miles, or 62 kilometres).⁵ The mountain continued to emit columns of smoke at intervals until 1594. On the 13th of October, 1663, at two o'clock in the afternoon, a dense cloud of ashes suddenly burst out of the crater to a great height, darkening the sky. On St. Sebastian's day, the

¹ *Teatro Mexicano*, vol. i. trat. ii. cap. iv. p. 77.

² *Historia general de las Cosas de Nueva-España*, vol. i. lib. iii. cap. x. p. 254.

³ *Monarchia Indiana, etc.*, lib. i. cap. xiv. p. 38.

⁴ Cortés, *Carta Segunda*, p. 22. Andrés de Tápia, *Relacion, etc.*, p. 574.

⁵ Motolinía, *Libro de Oro*, MS. cap. 65, pp. 263, 264 ; copied or at least corroborated by Gómara, *Segunda Parte de la Crónica*, p. 338.

following year, the fall of the eastern rim of the crater, already referred to, took place, and cinders again descended upon Puebla.¹ In 1692 all tokens of activity had well-nigh disappeared. In the last and the present centuries the Popoca-tepetl has a few times shown a film of smoke above its summit.² Earthquake shocks occur every year in its vicinity, and the inhabitants of San Nicolas de los Ranchos are occasionally startled by a dull sound, like a plaintive moan muttered by the slumbering giant.

On the northern slope of the upper dome of the volcano projects the basaltic point of the Pico del Frayle, plainly visible at a great distance, like a spur issuing from the side of the mountain. Further down, and at the foot of the dome itself, lies the Rancho of Tlamacaz, 3,897 metres (12,800 feet)³ above the level of the sea. The cliff, or *cerro*, bearing the same name, overhangs it to the north. Beyond the latter, and the uncouth hump of the Cerro Gordo, is the Cumbre, a treeless ridge, forming the divide between San Nicolas in the east and Amecameca in the west.

The Cumbre is historically famous on account of its passage in November, 1519, by Cortés and his body of Spaniards on their way from Cholula to the valley of Mexico. I have taken some pains to investigate the route followed by him on that occasion, and find that after leaving the pueblo of Calpan (not Xalitzintla, as some of my friends at Cholula were inclined to believe) the conqueror moved up to the north of San Mateo Ozolco on a long slope belonging to the drainage system of the

¹ Vetancurt, *Teatro Mexicano*, vol. i. p. 77.

² Humboldt, *Essai Politique, etc.*, vol. ii. lib. iii. cap. viii. pp. 344, 345. That great traveller can well be positive on the subject, since he approached, on the 24th January, 1804, as near to the volcano as San Nicolas de los Ranchos, whence he saw, at half-past five P. M., a dense cloud of black smoke rolling out of the crater. It is also positively stated that storms are at present preceded by tokens of activity on the part of the mountain.

³ *Geographische Mittheilungen*, 1868, p. 97.

Yztac-cihuatl, into the Monte. There are still traces of an old Spanish road in that direction. Passing through a place called Cuaubnehuatl, Cortés crossed the Cumbre about noon, and from the summit turned to the south, so as to hug the slopes of the Popoca-tepetl.¹ Bending thence to the northward, it was while they were yet in the higher timbered regions that the Spaniards enjoyed that first glorious view of the valley and the lakes which Prescott has so graphically described.² His picture of it, however inimitable, barely does justice to the extent and beauty of the scenery, so far as Nature is concerned. But he might have omitted the lament over the subsequent changes. Those changes, even as regards the picturesque alone, have certainly been improvements. Even admitting that the population may have decreased since the Conquest, the change from primitive horticulture to intelligent agriculture, and the introduction of new plants, as well as the change in architecture, have increased instead of lessening the beauty of the scene. The City of Mexico, with its domes and spires glistening in the noon-day sun, is certainly a finer sight than was the old pueblo, resting on the dull waters of the lagune like an adobe patch surmounted by the clumsy mounds of worship.

When Cortés traversed the eastern slope up to the Cumbre, he found that slope completely uninhabited above Calpan. This is a fact not to be forgotten. The western declivity was in a similar condition, and Amecameca, now a large village, was barely noticed by the conquerors.³

¹ There is a direct descent from the top (a bleak ridge) to Amecameca; but if the Spaniards enjoyed the view of the valley of Mexico soon after passing the Cumbre, they must have bent to the south for a short distance, and taken, as tradition reports, the longer and easier route, now called the Camino Real. I descended by the shorter route on the 27th of May, and ascended by the longer on the day following.

² *History of the Conquest of Mexico*, vol. ii. book iii. cap. viii. pp. 51, 52.

³ Cortés, *Carta Segunda*, pp. 22, 23; Bernal Diez, *Historia verdadera, etc.*, cap. lxxxvi. pp. 80, 81.

North of the Cerro Gordo the depression connecting the two volcanoes begins to rise towards the Yztac-cihuatl. The crest contains caves, where I was assured that the Indians still conceal stone statues, before which they continue to perform idolatrous rites in secret. I intended to visit these caves on the 24th of May, but my Indian guides, while promising to lead me to them, finally carried me far away to the north. The region is an utterly wild labyrinth of steep and lofty rocks, partly overgrown by timber, through which narrow gorges are cut, which sometimes widen out to little valleys. It is, and was during times of distinct tradition, completely uninhabited ; and now turpentine-gatherers and hunters alone roam through it.

The crest terminates at the foot of the southern point of the Yztac-cihuatl. As already stated, this mountain, while lower now than the Popoca-tepetl, is much more massive, resting on a base about twice as long from north to south, and somewhat broader from east to west, than that of the active volcano. This base, or pedestal, may be considered as reaching up to the snow-line, and on it rises a snow-covered crest, comparatively low, with three summits from south to north, of which the northern one is the highest. The base projects at both extremities very distinctly, and at the southern end a lofty columnar crag rises into the snowy regions, leaving a gap between it and the main summit to the north.

I have spoken of the different aspects presented by the volcanoes from the east and west sides. As seen from the upper valley of Chalco, the Yztac-cihuatl has a placid, undisturbed appearance, with its undulating snowy ridge extended like a woman in her last repose. From the Cholula side it presents a torn mural front, slightly amphitheatral to the southeast, from beneath which huge wooded plateaus sweep down towards the plain, cut through by steep gorges of great length. It took me a day's journey on foot, and considerable

toil, to ascend through the gorge called *barranca* de Apulco up to its headwaters, the Ciénega de Tecucho, close to the snow-line. The Monte of the Yztac-cihuatl, while not less solitary than the Monte of the volcano, is much more vast; its whole area is covered by stately pines, and there is a constant abundance of water, which we miss in the latter. Not only do several brooks sometimes pour down through the same *barranca*, but the almost vertical slopes of the higher regions are perfect fountains, and the narrow belt projecting from under the snow is covered with pools of limpid water. Into the deep gorge of Apulco four cascades descend from great heights.

The rock of the Yztac-cihuatl is more compact than that of the volcano. It is lighter colored, sometimes reddish, seldom amygdaloid or spongy, and very uniform. Volcanic ashes are seen in occasional patches about the snow-line. Pumice-stone was shown to me at Calpan, but it probably came from the volcano. I searched diligently for obsidian, and at last came to the conclusion that there is none to be found on either mountain. Neither could I find any trace of *chalchihuitl*. I consider this negative result conclusive in regard to obsidian, since, owing to its extensive use by the natives before the Conquest, we must conclude that it most probably cropped out in large masses easily discernible; but as the various green minerals to which the name *chalchihuitl*¹ is applied were much more valuable, it is probable that they were only found in thin seams, which are either exhausted, or which escaped my observation. A thorough geological exploration can alone decide the point.

¹ The name should properly be written *chal-xihuitl* (*x* standing for *sh*), as it is pronounced by the Mexican Indians. They are still very reticent about these stones. At the Hacienda of Buena Vista I was positively assured by an Indian that *chalchihuitl* occurs on the slopes of the Yztac-cihuatl, but when I asked him to show me the place, he denied all knowledge of the locality.

Humboldt has remarked that the longitudinal axes of the two highest craters in Mexico, — those of Orizaba and of Popoca-tepetl, — run from southeast to northwest.¹ These craters have each a tendency to grow in a southeasterly direction. The Yztac-cihuatl has the aspect of a volcano, once far higher than either of its present neighbors, whose crater has fallen in on the southeast side. The gap thus formed seems to have been gradually worn out to such an extent as completely to obliterate the whole eastern part of the summit. The snowy crest and a few portions of its western base left standing seem to be the last remnants of the original cone of eruption. The débris of the east slope and top accordingly would now constitute the soil of the district of Cholula. It is indeed singular, that, while the lower slopes themselves of the Yztac-cihuatl rest on solid rock, still lower down the barrancas cut through immense deposits of volcanic detritus or sand. This is very plain in the barranca of Atiopan (through which pass the waters of Calpan), the barranca of Cuahuitenco (between Calpan and San Nicolas), and east of the latter place the picturesque barranca del Teoton on the Hacienda of San Benito. These masses of volcanic débris thin out, as they spread eastward, to a fertile layer of black volcanic soil of sandy appearance, reaching very nearly to the Rio Atoyac. It seems reasonable to conclude, therefore, that the plain of Cholula and the territory of Huexotzinco owe their present topography and physical basis to the wasting of the high volcano, whose ruins are still extant in the present mountain of Yztac-cihuatl.

This inference that the Yztac-cihuatl may be an ancient wasted volcano bears upon archaeology in two ways. In the first place it touches the question of the antiquity of man on the plain of Cholula. No local tradition that could be applied

¹ *Essai politique*, vol. i. p. 165.

to such a geological cataclysm has been found among the Indians of Mexico. But the cosmological legends of the aborigines speak of destructions of the world by fire and by earthquakes, which overthrew the mountains and changed their forms; and tales of this sort must be taken in a local sense. The earth is small to man in the lower stages of culture. His valley, or the table-land on which he lives and expects to die, — these are the world to him; and in treating of “ages of creation” as described by the American Indians, we should always bear in mind the warning of Father Joseph de Acosta concerning the deluge in America: “There is among them commonly a distinct knowledge of, and much talk about, the deluge; but it cannot be well ascertained whether this deluge to which they refer is the universal one related by the Holy Scriptures, or whether it was some other deluge or special inundation of the regions which they inhabit.”¹

If on the plains about Cholula man preceded the formation of the layers of volcanic detritus now covering its surface, then vestiges of such ancient occupation must be sought for beneath those layers. The existence of buried remains along the Rio Atoyac, where the volcanic deposits crop out, is not a proof of this, as such remains may belong to a later age. But special investigations carried on sufficiently far back from the exposed surfaces to avoid mistaking objects which have fallen down or have been washed in for such as have remained *in situ*, would possibly determine the question. Still here arises another difficulty. The torrent-like rains of the tropics denude the slopes, thus exposing the *tepetlatl*, a yellow indurated clay forming the base of the whole region. I have often found pottery and obsidian flints and broken *metates* resting immediately on this subsoil.

¹ *Historia natural y moral de las Indias*, 1608, lib. i. cap. 25, p. 82.

Heavy objects, besides, might possibly sink through the lighter superficial strata to considerable depths. Discoveries in the *tepetlatl* itself would be of much greater positive value, but the age of that material in its relation to volcanic deposits must first be carefully determined.

The hypothesis which I have suggested also applies to the relative age of both high peaks. If the Yztac-cihuatl is a burnt-out volcano, then Popoca-tepetl, as its position and form indeed indicate, is of more recent origin. Subsoil investigations on the latter would therefore have to be conducted with due regard to such a difference in age. Besides, we may well ask if the tradition already related of the white child appearing upon a high summit might not perhaps be an indistinct record of the formation of the latter mountain, with its snowy cone, within the period of dim human remembrance? I place no stress on either of these suggestions, but throw them out as queries, which it is for specialists to answer.

From the foot of the volcanoes, about due east of San Nicolas de los Ranchos, there extends a line of isolated volcanic eminences. In the presence of the giants behind them they appear like hills, although elsewhere they would be regarded as considerable mountains. They are, reckoning from west to east, the Teoton, the Tecaxete, and the Cerro de Tzapotecas. The last named terminates about 4 kilometres ($2\frac{1}{2}$ miles) west of the city of Cholula.

Cholula lies upon a perfectly level plain, unbroken except by the great artificial mound called the Pyramid, which stands boldly out on the eastern outskirts of the city. There are no streams in the vicinity, and circular wells furnish alkaline water at a depth of from 5 to 22 varas ($4\frac{1}{4}$ to $19\frac{1}{2}$ metres, or 14 to 60 feet). In the streets wide conduits of red brick are still occasionally found, belonging to old chan-

nels of Spanish origin. At present the supply of drinking-water is brought on donkeys or by men from Coronango, 8 kilometres (5 miles) to the north. There is a fountain in the central square which was built by the Spaniards in 1581,¹ but although the Indians still resort to it for their household wants, the wealthier classes (among whom are included many aborigines) prefer the waters of Coronango, the wholesome qualities of which they learned soon after the Conquest. The little rivulet which flows towards the city from San Antonio, on the southeastern point of the Cerro de Tzapotecas, is only used for irrigation and for the washing of clothes.

The city is divided into four wards, and is laid out with the greatest regularity, with streets running at right angles, and generally paved, though towards the outskirts the sandy soil appears. Their width is about 7 to 10 metres (23 to 33 feet), and as they are very straight, and the houses often are one-storied, their appearance is neither dark nor dingy. The narrow pavements close to the houses are mostly made of sheets of lava (*lajas*) quarried at the foot of the volcanoes, but the middle of the street is depressed so as to form a channel. In the centre of the city lies the public square, called the *Zócalo*, — a lovely garden, shaded by Eucalyptus trees, and blooming with roses and geraniums. To the west of it extends the market-place, still generally called the Tianquiz.²

Of the public buildings, the churches claim principal attention. In the northeast corner of the square stands the great Franciscan convent, with three places of worship, — the convent-church proper, the so-called *Tercer-orden*, and finally the *Capilla Real*, — a magnificent construction. Its roof rests on

¹ *Relacion de Cholula*, MS., also map accompanying it.

² On the southwest corner of the Tianquiz there stands an ash tree, which, planted in 1852, has already reached a diameter of 1 50' (5 feet).

sixty-four large round columns, which support sixty-three arches. The interior of this vast hall, in which I have seen as many as three thousand people gathered on Good Friday, is much neglected, even the rain being suffered to enter. Its one hundred and four windows are mostly broken, and there are but few altars still in use.

The convent of the Franciscans was begun in the early part of the sixteenth century; at least a building of that kind existed in Cholula prior to 1529.¹ The present one is said to have been finished in 1604, and the royal chapel, formerly called "chapel of the natives" (and still regarded as specially belonging to the Indians), in 1608.²

The convent, whose proper name is San Gabriel Cholula, is said to rest on the spot where stood the principal mound of worship of the aborigines at the time of the Conquest.³ Recent excavations, however, made by the Christian Brothers, whose college is now in the building, have not brought any antiquities to light. The inner court in which these investigations were conducted has a gallery or archway running around it, on whose columns are painted the portraits of twelve Fathers who lived in the convent at an early date, headed by Fray Miguel Navarro, and closing with Fray Joan Osorio; most of whom are known to have lived and died in the sixteenth century.

¹ García-Icazbalceta, *Zumárraga*, Appendice, p. 243. "Informacion," beginning at Cholula, 3d May, 1529, "Guardian del Monasterio del pueblo, Fray Alonso Xuarez."

² José María Reyes Ramírez, *Estadística geográfica del distrito de Cholula*, MS. 1880. On the steps of the court is carved the date, 1608, while on the stone cross that of 1660 is given. In 1652 the *Capilla Real* was taken from the Franciscans and given to the secular clergy. Vetancurt, *Crónica de la Provincia del Santo Evangelio de México*, pp. 172 and 173.

³ Gabriel de Rojas, *Relacion de Cholula*, MS., 1581, § 14: "Estos dos Indios estaban en un templo, el mayor que habia in esta ciudad, que se llamaba Quezalcoatl (donde agora es el convento de religiosos que hay en ella)."

On the northwest corner of the *Zócalo* is the great *Parróquia*, or principal church of the city. It is of more modern date, but I have not been able to learn when it was built. The edifice is a stately one, and when on the 18th of March, after sunset, its two towers began to blaze in the light of huge torches, the sight was weird and imposing. Its patron saint is St. Peter, and its proper name, San Pedro Tlatiltenanco.¹ While the books of the parish begin in 1641 only, there is a mention of a church of San Pedro y San Pablo Tlaquiltenanco in a document of the year 1555, the said church being then in process of construction.² It is certain, however, that in 1581 the site now occupied by the *Parróquia* was that of the Court of Justice, or *Audiencia*, a long two-story building with arches and portals in front, as it is represented on a map of Cholula, executed in the latter year.

Besides the *Parróquia*, the city contains at least twenty-two other churches, not counting the shrine of Nuestra Señora de los Remedios, on the summit of the so-called pyramid, and that of Nuestra Señora de Guadalupe, on a natural hill west of the city. A number of these are abandoned and decaying. Although I have not been able to fix the dates when these various churches were built, there is an evident indication of shrinkage in the fact that those which are abandoned lie in the outskirts of the city. Farther on I shall show that this shrinkage is not an evidence of depopulation, but of concentration around an interior nucleus. At the close of the seventeenth century the city contained, besides the convent and the royal chapel, eighteen hermitages, "some of which may serve as churches."³ It appears, therefore, that the

¹ Ramirez, *Estadística*, MS.

² *Testamento de Capixlahuatzin*, MS: "Que mi hijo Sebastian de Mendoza Cuatlapol a de acabar de hacer la Yglesia de San Pedro y San Pablo Tlaquiltenanco en la tierra del Señorío."

³ Vetancurt, *Crónica*, etc., p. 173.

large sanctuaries now standing, including the *Parróquia*, are the work of the past century, and furnish no evidence of a larger population in previous times.

There are no government buildings at Cholula. In the block west of the *Zócalo*, the *Gefe político* of the district and the municipality of the city have their offices in the locality called the *Portales*. There also are the jail and the archives. The offices of the various judges are scattered among the private houses. The *Portales*, before referred to, were built in 1646, under the vice-royalty of the Marquis de Salvatierra, for government purposes, according to a tablet of stone inserted in the outer wall near the jail. But in 1581 that whole space was still vacant; the *Corregidor* occupied an isolated house south of the *Zócalo*, and the *Audiencia* met, as already stated, on the site of the actual *Parróquia*.¹ The bulk of the people, exclusively Indians, lived in groups of houses farther away from what is now the centre and business part of the city, leaving that centre much more unoccupied than at the present time.

Cholula proper has but few industries. Cotton goods are woven in private houses on hand-loom, which, however, are no longer of the primitive mechanism. Fireworks are manufactured to perfection and in great quantities, and there are one or two small stills; otherwise there is little done. The abandoning of the cochineal culture was the first blow to the place, and the growth of Puebla has cast a blight over the large Indian pueblo.

The fabrication of pottery was transferred to the young Spanish city, not in a compulsory way, but gradually in the natural course of events. Finally the establishment of cotton mills on the Rio Atoyac has greatly diminished, if not completely ruined, the home industry of Cholula.

¹ See map of Cholula of the year 1581.

I have already stated that the city is divided into four wards. These wards and their relative situations are as follows :

In the Northwest, Santiago,	1,645 souls.
Northeast, Jesús,	1,220 "
Southwest, Santa Maria,	1,509 "
Southeast, San Pablo,	1,147 "
<hr/>	
Total,	5,521 souls, —

occupying an area of 1,325 acres.¹ This includes fields, gardens, and even the base of the so-called pyramid which alone covers twenty-five acres, so that little more than one half of the whole surface is occupied by the buildings proper. They are all of adobe and stone, but the former prevails. They are frequently one-storied, rectangular or square, built around an inner court, and whitewashed and painted on the outside. Large doorways, closed by double doors, which in the older buildings are decorated as well as strengthened by wrought-iron nails, give entrance to the better houses. The sides of these doorways, and even the lintels, are often made of red brick ; and in that case a squared wooden beam is laid across the top. The corners of the buildings are sometimes of brick also, but hewn blocks of lava, mostly parallelopipeds, are equally used in such places. Of stone lintels I have seen four kinds, besides the tall portals of modern dwellings.

One is simply a heavy parallelopiped of lava, resting on the sides at both ends. The other is also flat, but composed of trapezoidally cut blocks, those in the middle being wedge-shaped, so as to form a key-stone. The third kind is a very flat arch, with two irregular wedges forming key-stones.

The fourth kind is very peculiar, and I have not as yet seen it anywhere else than at Cholula, and its former quarter of San Andrés, now an independent pueblo. I know, in fact,

¹ Ramirez, *Estadística*, etc., MS.

of but four, three of which are in the city, and one in San Andrés. It is also a low flat arch, composed of only three pieces, one of which, as the annexed cut shows (*a*), is a perfect key-stone, fitted in between two blocks (*b*) and (*c*). These last lintels, as well as the sides of their doorways, are elabo-

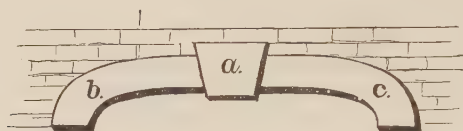


FIG. 3.

ately carved with human faces, bearing a strange resemblance to those found on ancient pottery. Still there are other marks showing that, although undoubtedly of Indian fabric, they post-date the Conquest.

The rooms of the houses are generally very high, and the windows few in number but large, with iron railings, and closed by heavy wooden shutters on the inside. The ceilings are of wood, supported by regular joists, which in the better houses are well painted and have a pretty effect. The roofs, invariably flat, are made of adobe, with a calcareous composition, impermeable to rain, overlaying it. The method of constructing the roofs bears directly upon archæological questions, as does almost every point relating to the present architecture of Cholula. There is such a strange admixture of aboriginal and imported features that it is very difficult to discriminate between them ; so that a full statement of what now exists is needed to prevent misconceptions in regard to what are remains of former times.

There is neither cellar nor chimney to be found in the whole district of Cholula. Cellars are not necessary, as the climate is so temperate that all stores can be preserved above

ground; and if the weather ever grows unusually cool, the rooms are warmed by braziers, while the food is cooked in long, generally semi-circular, brick ranges. These have their convex front perforated by a number of pigeon-holes for the fire, with a fire-place immediately above, and are fed with charcoal only, so that no smoke is created. What smoke does arise from an Indian hearth eventually finds its escape through the door and windows. Not unfrequently this hearth is placed in a corner of the inner court, with no other shelter than a few boards or maguey-leaves.

Although the aboriginal population is fairly represented in the city of Cholula, its stronghold proper is the villages or pueblos. There are many pueblos which do not contain a single white man; in others the Cura is the only one not of Indian blood. It would seem, therefore, to be easy to study the customs and manners of the aborigines; but in reality it is a very difficult work. In the first place the Indians have been in close contact with the whites for nearly four centuries past, and have consequently modified to a great extent their habits and mode of life. In the second place the Indian of the Nahuatl stock is naturally shy and suspicious, and not prone to give reliable information on any topics whatever unless he is thoroughly satisfied either that such information is absolutely harmless, or that it will be a direct benefit to him to tell the truth. Those who are not sufficiently prepared for the task might reside for months in a pueblo without deriving any profit from such residence, though treated with the greatest politeness and affability.

Though the Nahuatl Indian is often as tall as any native North-American of average height, his frame seems to be more delicately formed than most. I did not see in the whole district a clumsily built Indian. Their chests are less broad than the negro's; their arms are not so long as his, and

their hands and feet are small and slender. If the whites in Mexico were a more broad-shouldered, strong-limbed race, like the people of the North, the aborigines would seem to be physically a smaller, much more delicate type, as the pueblo Indians of New Mexico seem in the streets of Santa Fé. Though they are naturally straight and rather graceful, the habit of carrying loads on their backs, or rather foreheads, and of using hoes and shovels, often bends their forms. In spite of his slender frame, however, the Indian is strong and remarkably enduring. While riding from San Nicolas to Calpan on the 18th of May I overtook a boy, only fourteen years of age, who was going to Huexotzinco on foot, a distance of 16 kilometres (10 miles), to return the same day with a load of 3 *arrobas* (75 lbs.) on his back. Grown men frequently carry 6 *arrobas* (151 lbs.) and even 8 *arrobas* (202 lbs.) long distances. The effects of early training should not, however, be overlooked here. The women carry as heavy loads as the men, in proportion to their size; and both sexes are steady, and fast walkers. Returning from or going to market, they sometimes trot for leagues. The altitude of the region and the consequent thinness of the air much facilitate walking, as I have often experienced.

Although there is not that great difference in height between the sexes which strikes the observer among the pueblos of New Mexico, the women naturally are somewhat smaller than the men. Their features are often round and their faces flat; noses slightly upturned, and pouting lips abound; and invariably they have large dark eyes and long jet-black hair. Still I have seen many with thin features. The men appeared to me generally to have thinner faces, and consequently sharper profiles; unusually high cheek bones occur, but not as a rule. The hair of the men is mostly straight, black, but not always coarse. In general, I must confess my inability to detect any peculiar type. Measure-

ments alone, and of a large number of individuals of both sexes, could give trustworthy results ; but unless such measurements were made by command of the Government, it would be unsafe to attempt them.¹

The study of the physical characteristics of the Indians in the Cholula district is rendered very uncertain, by the utter impossibility of determining whether any particular individual can be regarded as of pure type or not. The two races are so blended that we can seldom judge whether any one is of unmixed blood, or whether there is something of the Mestizo in him. I was consequently compelled to consider those as Indians who called themselves such, and lived after the Indian manner, and claimed the Nahuatl language as their native tongue.

An early document says in regard to the idiom at Cholula : " They speak it somewhat more clumsily than at Mexico and Tezcucó." ² I am unable to decide on this point, but must recall the fact (already mentioned in Part I.) that the Nahuatl of Cholula struck me as much more euphonious and elegant than that of the coast-range near Orizaba and Tehuacan. The former is a clear-sounding labial and lingual speech ; the latter contains gutturals, or certainly strong aspirates. These cut up the flow of language, so to speak, and give to it that peculiar clumsiness which justifies the ancient Mexican term *popoluca*, "stutterer," applied by the valley tribes to others. It has been supposed that only such aborigines as spoke foreign idioms were included under this head, but in view of the marked difference in sound just mentioned, I sus-

¹ At San Juan Cuauhtlantzinco, a village formed after the Conquest by Indians from Cholula and Tlaxcala, I noticed that the forehead of the men appeared to retreat from the superciliary ridge. The frontal bone itself was short, and seemed almost vertical. * The face was generally slightly prognathous.

² Rojas, *Relacion de Cholula*, MS. § 5: "Hablan todos la lengua Mexicana, algo mas tosca que los de México y Tezcucó."

pect that it also applied to branches of the Nahuatl. In regard to the peculiar sound of that language as I heard it here spoken, I can only say that there is not the slightest analogy between it and the pueblo idioms in New Mexico. This may appear to be a superfluous or even trivial remark; but we should never forget that while the grammatical construction of languages has always been the object of study, the manner of the formation of sound is yet but imperfectly known. In the present case the question arises as to which was the original mode of speech; whether the clear-sounding, vocal, Italian-like enunciation of the plateaus, or the roughly aspirated, almost guttural tones of the mountains. Is the former a result of higher development, or the latter a consequence of isolation and decay?

Much has been said about long words in the Mexican tongue. So far as my experience goes, such words in practice are used as sentences and not as single substantives. Greetings are very formal, and appear almost interminable; but they are mere set phrases, with Spanish words intermingled, which are "rattled out," accompanied by gestures of great and often dignified politeness. I have no doubt that they are inheritances from the early period of Spanish domination.

The Indians of Cholula cling, very tenaciously, to certain fashions of clothing. It is not to be concluded, however, that the articles worn are of the same fashion as at the time of the Conquest.¹ The present dress of a male Indian consists of a white cotton shirt, originally called *nipilli*, now worn with

¹ They gradually began to change towards the middle of the sixteenth century. Rojas, *Relacion*, etc, § 15: "Al presente se visten en general de camisas y zaragüeles que de los Españoles han tomado, todo de algodón, y algunos dellos usan zapatos, y todos sombreros, al uso español, y otros traen los propios zapatos antiguos que llaman Cactli, y en general traen las dichas mantas blancas, que llaman tilmatl, anudadas, como he dicho, al hombro derecho."

sleeves. This shirt is commonly unbleached, although sometimes a fine bleached one is bought at Puebla, with a tucked and plaited front, like a French blouse, and worn on Sundays. Wide trousers, also of white cotton, hang down to the knee; the lower limbs are bare, and the foot rests on (not in) a sandal, — *cactli*. The *cactli* consists of a sole, made of strong tanned leather, with strips of skin (sometimes of deer-hide, or often mere pieces of raw-hide) sewn to it in front and on both sides. The two strips in front are passed between the great and the second toes, and thence around the ankle, where they are tied; those from each side meet the others on the instep. Thus the foot is left virtually bare, the sole alone being protected; and this shoe the Indians greatly prefer to any other for walking. The head is always covered by a broad-brimmed hat, made out of *petate*, or matting, — a very durable and exceedingly practical article.

Beneath the trousers or white drawers they still wear the *maxtlatl* or original diaper. It is singular how long this ancient garment has remained in use. I found it among the pueblos of New Mexico, worn beneath machine-made pantaloons from factories in New England.

To protect themselves from the cold, or rather from the chilliness, more keenly felt in a climate otherwise equable, woollen *sarapes*, or blankets, are used. They are commonly made of coarse, gaudily-colored wool, by Indians of the State of Tlaxcala (or some other places); or sometimes of cotton with a slit so as to admit the head.

The common dress of the women is a petticoat, — sometimes of cotton, and often of dark heavy wool. This garment is made in one piece and fastened behind, both sides overlapping. Beneath it they wear a chemise without sleeves, often embroidered with beads.¹

¹ These embroideries, made by Indian women of Cholula and vicinity, cost

In addition to these articles of clothing the women wear the *reboso*, a long scarf of blue cotton, imitating a narrow shawl introduced by the Spaniards. But I have seen the women of the pueblo of Tlaxcallantzinco, east of Cholula, on their way to market wearing an embroidered breast-cloth, through which they pass the head, and whose stitched patterns are very similar to those still exhumed on the coast of Peru.¹

The Indian woman either wears the *cactli*, or goes barefooted. The head is often covered by a hat of matting, which they remove as scrupulously as the men do at greeting, and in addition they wind around the head a tress of their own lustrous hair, with bright-colored ribbons interwoven. This turban-like ornament certainly antedates the Conquest.²

Small children often wear merely a shirt. But even a child of four years old, if a boy, is dressed in little trousers; if a girl, in a small skirt. The innocent nudity of the children in the pueblos of the north is not seen among the Indians of Cholula.

from \$1 to \$2 per set. It is singular that the word *chaquira* for bead, which belongs to a language of the Isthmus (Coiba or Cueva), should have been carried by the Spaniards as far north as the New Mexican pueblos, and as far south as Peru and Chili.

¹ This is an aboriginal garment, dating from before the Conquest. It is well-described by Rojas, *Relacion*, etc., § 15: "Y sobre las naguas un guipilli de la propria hechura de sobrepelliz sin mangas; con sus ruedos ó cenefas labradas de algodón de colores con fluecos de pelo de conejos y liebres y pluma de patos, aderezado para aquel efecto. Tienen estos guipilles dos escudos cuadrados, uno en los pechos y otro en las espaldas, muy labrados de muchos colores y oro, con diversas figuras, como son de aves y pescado, y animales, el cual traje usan ahora sin discrepar." I tried in vain to purchase one.

² W. Bullock, *Six Months' Residence and Travels in Mexico*, 1824, pp. 78, 197. Rojas, *Relacion*, etc., § 15: "El cabello es negro y muy largo, en el cual se dan algunos nudos y lazadas en la cabeza, que á su modo parece bien." This head-dress is figured on the Indian paintings of the sixteenth century, to which I shall refer hereafter, called *Mapa de Cuauhtlantzinco*, and *Mapa de Chalchihua-pán*, both from the district of Cholula.

The dwellings of the aborigines in the pueblos proper deserve careful study. There are several features about them of ancient origin, and as I have satisfied myself that, with the exception of mounds, remains of architecture which antedate the Conquest have almost completely disappeared, the Indian houses of to-day should be the more closely studied in order to trace reminiscences of strictly aboriginal times. Even in the pueblos there is a difference in construction between the houses of the wealthy and those of the poor; besides, there is a marked contrast between those of the Plain and those of the Sierra. I must premise by saying that every family lives by itself, and that there is no trace of communism, so far as shelter is concerned.

When, on the 23d of March, I presented myself at the pueblo of Cuauhtlantzinco, in order to copy certain aboriginal paintings there preserved,¹ I was not received as I expected. I was not even allowed to stay in the pueblo, but an Indian of the place, Don Joaquin Tepoztecatl,² secretly offered me the

¹ These paintings, which are known by the name of *Mapa de Cuauhtlantzinco*, I wish to call *Códice Campos*, in order to distinguish them from the old map of the pueblo, as well as to do justice to the venerable curate of Cholula, to whom we owe their preservation. They are of the highest importance for the history of the Conquest of Mexico, and are executed in oil-colors, on European paper, filling two wooden frames. By direction of the Padre D. José Vicente Campos, who discovered the sheets some thirty years ago and saved them from decay, they were pasted on cotton sheeting and framed. Each sheet is 0.40 by 0.30 metre (16 by 12 inches) in size, and contains scenes from the Conquest,—not badly executed,—and portraits of aborigines. Each bears a text written in Nahuatl, which the Padre Campos translated into Spanish by the aid of the Indians themselves, and the translation he has added to the charts. The Indians claim that the paintings are of the sixteenth century, and that they were executed by one Tepoztecatl. All my endeavors, and those of the venerable priest, to secure permission to copy the *Mapa* utterly failed. The natives actually concealed—perhaps buried—the pictures, after having invited me to their pueblo to take a copy, and having permitted me to see them for a few moments only. If my subsequent stay at the pueblo has not been without result, it was against the wish of the population, whose stupidity and treachery I wish to place on record here.

² To his friendship and aid I owe what little work I could do at Cuauhtlantzinco. He was my only supporter in the midst of a hostile village of 1,400 souls.

hospitality of his house, which I at once accepted, and thus remained eleven days in the pueblo, much against the will of its people. Although at my own request, owing to lack of space in his house, I moved the next day into another building belonging to him, I was at his home daily, and thus had the opportunity of studying two Indian houses of the better class in the plain of Cholula.

Plate X. Fig. 2 gives a diagram of Tepoztecatl's residence ; Fig. 3, the main door (*a*) ; Figs. 8 and 9, the roof and ceiling. It is a rectangle, 23.5 metres (77 feet) long, and only 3.80 metres ($12\frac{1}{2}$ feet) wide. The height of room, roof included, is 4.56 metres (15 feet), of which the roof occupies about 0.75 metre ($2\frac{1}{2}$ feet). The walls, of adobe, have an average thickness of 0.42 metre (17 inches), which is quite sufficient for a one-story building.

It will be noticed that there are three sections, or rooms, respectively lettered I., II., and III. I. is the principal house, and its length alone is 11.40 metres (37 feet 4 inches). The entrance is towards the east, by the large double door (*a*), and the floor is raised, so that two steps ascend to the doorsill (Fig. 3). Around the east and south sides extends a projection of red brick. This apartment is the *sala*, or grand room ; and at its southern end stands the family altar, with the image of the patron saint.

Rooms II. and III. are subsequent additions to I. They are lower, and the doors (*b*, *c*, *d*) all enter without steps, the floor being on the level of the ground outside. II. is used as a storeroom, and III. for a kitchen. The whole building has not a single window ; in fact, in the whole district of Cholula there is not an Indian dwelling with a window in it. The wide door furnishes ample light and air, and it is always open, except at night and when the family is absent.

The floor of all three apartments is merely clay ; but that

of I., being filled up, is firmer and smoother than those of the two others. Some Indian houses have their floors paved with brick, like those of the houses of Cholula; but these are not numerous. In the court, or garden, in front of this building, near the northeast corner and the trees marked *ee*, Joaquin and I dug up, at a depth of 0.50 metre (20 inches), fragments of a layer of coarse whitish composition, 0.01 metre ($\frac{1}{5}$ of an inch) thick, which he called the remnants of an old floor. This composition, if originally of Indian origin, does not contain burnt lime.¹ I have been told also, that red clay (*tlahuitl*,—washed with blood), as in the New Mexican pueblos, was formerly used for the composition of ground-floors. I give this information for what it may be worth.

While the doorway *a* is built up of brick and whitewashed, the door *b* has a single slab of lava placed across its top as a lintel; but the doors *c* and *d* are much more primitively constructed. Five round sticks of wood, with the bark peeled off, are placed above as a lintel, resting on the adobe at both ends, and supported besides at each side of the door by a round under-post. This very awkward lintel reminded me of a similar one found in the abandoned Cave Dwellings of the Rito de los Frijoles in New Mexico.

The roof and ceiling are represented in Figs. 8 and 9. The joists or timbers (*quauhmanil*, in Nahuatl) are squared with the axe, and laid across, not lengthwise. The splinters (*quauh-pixotl*), Fig. 9, are placed edgewise. Then follow 0.10 metre (4 inches) of earth (*tlalli*), and finally the impermeable top-layer of *tenixtl*, also 0.10 metre (4 inches) thick, and now composed, I am told, of burnt lime, with fragments of lava

¹ As early as 1581, the nearest lime-kilns were at Puebla, and in the hands of the Spaniards alone. *Relacion*, etc., § 31: "Y la cal de la ciudad de los Angeles . . . de donde traen la piedra, y en hornos que dentro de esta ciudad tienen la cuecen."

or pebbles. The earth is firmly pounded down; and then the coat of lime is spread over it, and bits of lava are pressed into the lime with a pointed stick. The use of burnt lime certainly post-dates the Conquest, but as the roofs of ruins—at Mitla, for instance—are also capped with a layer of a white impermeable substance, which effervesces with acids, the probability is that, in aboriginal times, pulverized limestone, unburnt, was used for a similar purpose.

This adobe is made without straw, although this is not the general custom. The foundations of the house are of broken stone and rubble, for the extent of room I. The other two apartments rest with their adobe walls on the ground. In former times the Indian of the Plain, like the Pueblo Indian of New Mexico, dug a trench about 0.50 metre to 0.75 metre (20 to 30 inches) deep, or deeper, until he reached the *tepetlatl*, so as to rest the foundations of his house on that impermeable clay; now, this precaution is rarely taken.

To the east wall of the house (its front) is joined a partly interrupted adobe wall, along whose north side grows a hedge of columnar *Cereus*. There is also an interruption west of the point *b*, which is filled by a row of *Cereus*. *q, q, q*, is another adobe enclosure, partly decayed. The whole forms a fragmentary court in front of the house, 23½ by 20.68 metres (77 by 68 feet), which contains the well (*h*), the *Cereus* hedges (*iii*), and an *ahuacate* tree (*j*).

The eastern wall has the oven (*k*) for the baking of calabashes, and the ancient stone cross (*l*) built against its west side (Fig. 7). This court was formerly occupied by buildings, but there is no tradition that they were ever used for dwelling purposes. Still the cross is said to have rested on a floor, now destroyed, which would indicate the former existence of a *sala* there. There are other adobe foundations (IV.), which appear like ruined outhouses. The present owner positively

asserts that the apartment I. was the original home of his family, built not less than three centuries ago, when Cuauhtlantzinco was founded.¹ He admits that the house has been repaired and even improved, but nevertheless insists that the size and shape are old, post-dating the Conquest by less than half a century. Thus he acknowledges that all brick-work is of a later period, that the joists or beams are new, that the upper crust of the roof has been replaced, and that the door itself, with its wrought-iron hinges, is very recent. Tepoztecatl assured me that prior to the Conquest the houses had no doors (a fact otherwise confirmed),² but that soon after a rude door was introduced. This was made of rough planks, fastened together by strips of leather or flexible roots, and was opened and shut by a wooden latch inside, drawn up by a fibre. It was hung to a round post, swinging in the two stones, represented in Fig. 4. The upper stone (Fig. 5) is a thin wedge-like slab, 0.32 metre (13 inches) long, and 0.08 metre (3 inches) thick, worked out to a ring at one end. This ring has an outer diameter of 0.14 metre (nearly 5 inches). The lower stone (Fig. 6) is a block nearly square, 0.37 metre (15 inches) long, 0.27 metre (11 inches) broad, and 0.17 metre (7 inches) high, in which a slightly conical hole, 0.08 metre (3 inches) deep, and 0.12 metre (4 inches) in diameter, has been drilled. Thus the doorpost could revolve freely, as the lower stone was laid upon the doorsill, and the upper wedged into

¹ The foundation of Cuauhtlantzinco dates back to the time of Cortés, — therefore, between 1519 and 1528. I shall allude to it hereafter. The church bears a date which is claimed to be 1522, but I read it, 1722. In the *Testimonio de la Merced de San Juan Cuauhtlantzinco*, MS., there is a claim of a grant based upon a promise on the part of Cortés for assistance rendered to him. I shall be more explicit on this point hereafter.

² Gómara, *Segunda Parte de la Crónica*, etc., p. 440: "No hay puertas ni ventanas que cerrar, todo es abierto . . ." Juan Bautista Pomar, *Relacion de la Ciudad de Texcoco*, MS. 1582, xxxi. p. 513 of copy: "No tenian estos aposentos puertas sino unas portadas de madera."

the adobe above, having the ring protruding. I found both of the stones represented in Fig. 8 in the court-yard, and afterward saw them *in situ* in old churches. These primitive door-hinges, even, are therefore a Spanish invention, at the period when iron was still scarce in Mexico.

A ground plan of the house in which I lived at Cuauhtlan-tzinco is given in Plate X. Fig. 19. It was also of adobe, and its walls are 0.50 metre (20 inches) thick. The size of the adobe differs in the building used as the *sala* (I.), and in the part now serving for kitchen, entrance, and storeroom (II., III., and IV.),—measuring in the former, in all three directions, respectively, 0.55, 0.33, and 0.13 metre (22, 13, and 4 inches); in the latter, 0.50, 0.41, and 0.12 metre (20, 16, and 4 inches). This building is recent, the joists of the *sala* bearing the date of 1796. It was erected for a public storehouse, and not for a residence, and the doorway is elaborately ornamented. In other respects it is similar to the first one described, but the wall is still entire, forming an enclosed court.

These two buildings, as I have before remarked, may be regarded as fair specimens of the better class of Indian houses in the Cholula Plain. A great many appear to have only one room; still there is always a kitchen shed outside, and a little outhouse used for storing.

Beyond the immediate neighborhood of Cholula, towards the mountains, we meet with a different style of architecture. The flat roof of heavy material is gradually replaced by a steep roof of thatch; and in place of the three rooms, the family lives in three distinct and separate houses.

The thatched roof is either two-sided (Plate X. Fig. 12) or four-sided (Fig. 11). In every case it is made of *hanks* of straw, or mountain-grass (*sacatl*), bound with maguey fibres (*pita*), and fastened on a rude framework of poles, so as to over-

lap each other. Not a nail enters into the whole construction. These thatch covers are sometimes very heavy, but how far they are to be regarded as a native fashion admits of question. If they were made of straw only, there would be no doubt about their being a Spanish importation; but sometimes they are made of long grass, which certainly grew in the district of Cholula prior to the Conquest; and as they are so much like the thatched roofs of the coast, and of Oaxaca, I am inclined to regard them as ancient in shape, if not in material. (Plate X. Figs. 14, 15, 16, 17, 18.)

In the Sierra, some of the buildings owned and inhabited by Spanish families have the flat roofs of the Plain, but the gable roof is the rule. Sometimes large shingles, fastened by two wooden nails, are used, like the clapboards on early houses in the western part of the United States. This method of covering is rare on the Cholula side, but almost universal in the valley of the Chalco; and I also found it in the eastern parts of the State of Puebla, about Tehuacan.

The building material of the walls in the Sierra is stone and wood. The three classes of Indian buildings already mentioned are distinct, not only in their uses, but very often in the material out of which they are made. These three structures are sometimes all in one enclosure; but they are also often scattered, so that two stand on one lot, and the other on another. Fig. 10 gives an idea of a group of two.

The *sala* (*teopantziutli*, little place of God) is represented on the ground-plan by I., of which Fig. 12 gives a gable-end view. It is commonly of hewn stone, and the corners are formed by upright parallelopipeds. The stones are often laid dry, sometimes with a thin coat of adobe clay between, and rarely in mortar. The masonry is heavy, but presenting a good appearance, and having but one door (Fig. 13), with lintel and sill, generally of a single block each. There are no win-

dows, but merely a small square hole in one of the gable-ends, close to the pinnacle. The *sala*, as in the Plain, contains the family altar, and pictures of the Virgin and Saints, has the floor of adobe or brick, and no ceiling.

The kitchen (*tescalli*,—house of the one who grinds on the *metate*) is generally made of upright rough boards or poles, bound to an inner frame of posts and laths (Fig. 12), with a thatched roof heavier than that of the *sala*, and often four-sided.

The storehouse (*cencalli*,—house of ripe corn) is commonly designated by the Spanish word *troje*, corrupted into *tolosha* by the Indians. While the *sala* and kitchen are always in the same grounds, the storehouse frequently stands apart on a different lot. It is made of very thick planks, roughly hewn and dovetailed at the corners, and stands some 0.90 metre (3 feet) above the ground, on four, six, or eight posts or stones. The roof is similar to that of the kitchen. In the Plain, I have also seen storehouses made of cornstalks, set vertically, and tied to an inner frame, or forming a conical hollow stack. But such frail structures are temporary, and mostly used for maize only. The pueblos of the territory of Huexotzinco, such as Santiago Xaltepetlapan and San Simon Tlalnicontla, have peculiar contrivances for storing their corn. They are little round towers of stone or adobe, always whitewashed outside, about 3 metres (9 to 10 feet) high, narrower at the base than at the top, with a square air-hole near the roof. This is composed of boards, and resembles a Chinese hat in form, and can be removed at will. It is kept in place by heavy stones laid on it, as is the custom in Switzerland.

Thus it appears that while the inhabitant of the Plain concentrates his rooms within one building, the dweller of the Sierra makes of each apartment a distinct house.

The greater difficulty in constructing large houses of stone

than of adobe, may be assigned as the cause of this difference; but the chief reason, I believe, may be found in the shape of the roof. While it is easy to extend a flat roof over a wide surface (as the large pueblo houses of New Mexico amply demonstrate), or to make long and high sheds, like those used by the inhabitants of the South Sea Islands, a gable roof, resting on vertical walls, is a much more intricate fabric. When, therefore, the character of the soil rendered the manufacture of adobe less desirable, or even impossible, or the abundance of wood and stone made their exclusive use as building-materials a matter of practical convenience, the pitched roof was adopted. Such is the case in the western and southern districts of Cholula, and all over the *Tierra caliente*. But as the Indian was unable to make the roof large and strong enough to accommodate all his needs under one shelter, he built a separate hut for each particular purpose.

This same feature appears among the sedentary Indians of New Mexico. In that country, up to the time of its second settlement by the Spaniards, after 1680, the round *estufa* played an important part in house life. It was the dormitory of the men. Women cooked and slept, together with the children, in the square cells of the great communal piles. The latter also contained apartments specially reserved for storage. Now, however, that the family has become better constituted, each is a distinct unit; and consequently, while the *estufa* is at present used exclusively for public purposes, each family has three rooms, one for winter, one for summer, and one for the stores. In Mexico, where there is no need of special regard being paid to climate, the use to which each of the three places is devoted is different.

The *sala* is seldom inhabited, in a strict sense of the word. It is the spare-room, the gala-room, — the place of reception, of family worship, of festivals. The kitchen contains the hearth,

the *metlatl*, and all the simple apparatus for cooking. Unless a stranger is present, meals are taken there; and if that stranger is not a white man, he also eats in the kitchen. The family sleeps sometimes in the kitchen, but frequently in the storehouses. Of late, some of the men have begun to make use of the *sala* for the night. There is a curious analogy between the present and the ancient *estufa* of New Mexico, in that both were used exclusively as places of festive resort and quarters for males; the similarity between the New Mexican and the Mexican kitchens and storehouses is also obvious. While this would not justify us in tracing relationships, it evidently establishes the present division of the Mexican Indian house, into three sections, as being a very ancient aboriginal custom.

The house life of any people stands in direct relation to its conceptions about consanguinity and affinity. At the time of the Conquest, the power of the *kin* or *gens* was still strong enough in Mexico to encroach daily upon the family unit,¹ but this power, in the district of Cholula, has since been completely broken, and our system of consanguinity, at least theoretically and officially, has been completely adopted. The strenuous efforts of the Church to enforce marriage, as understood in Europe, bear witness to the protracted struggle between the clergy—who could not, at the time of the Conquest, understand fully the peculiar nature of a system of relationship then in a period of transition²—and the Indians, who comprehended

¹ Compare my *Social Organization and Mode of Government of the Ancient Mexicans*, pp. 567–570, 623–630. Nearly three years have elapsed since that essay was written, two of which have been spent in further documentary studies; and nearly one has been passed by me among the Indians of Mexico and New Mexico. There I lived, not only in their neighborhood, but as they themselves do; and I have found no occasion to change any of the conclusions reached in that or any of my previous papers. That these papers are based upon the labors of Lewis H. Morgan, I need not state; but I refer principally to *Ancient Society* for a more thorough study of the questions in issue.

² The conditions of marriage among the Indians were never fully understood

still less the new ideas thrust upon them. In consequence of it the *kin* disappeared, but slowly, and apparently its last vestige was the communal tenure of lands. The Laws of Reform officially obliterated that last trace of it. Still, there are tokens of the former existence of the *kin*, left in the very bosom of the family, in the Indian family-names of the people.

An old MS. of the year 1555—written by an interpreter, in the Nahuatl language, with European letters, for and in behalf of the principal men of Cholula—begins as follows: "We, the old men, chiefs and caciques, say that we now put on record in writing, that we were the first ones held worthy of receiving the grace of God, our Lord Jesus Christ; and also that it was told that the true faith would come, and the holy baptism, and that we should be named each one for himself."¹ In the early documents, therefore, such as the record of division of lands in 1566, about Calpan and adjoining territories, the Indians appear with Spanish family-names.² But already the Merced of Cuauhtlantzinco contains Indian personal names in the Nahuatl idiom, transformed into regular appellatives. In this way Tepoztecatl (cutter of copper) and Xicotencatl (man

or explained until Mr. Morgan revealed, in his works, the system and terminology of Indian relationship. The early missionaries have, on that account, left very contradictory pictures. But they solved the question by enforcing the marriage rules established by the Church, and thus changed both system and terminology in Mexico. We may regret this in a certain sense, but cannot attach any blame to them for so doing.

¹ *Testamento de Capixlahuatzin*, MS. This document, originally written in Nahuatl, and signed by Fray Martín de Valencia as testifying witness, is the last will of Gerónimo de Mendoza, whose Indian name is Capixlahuatzin, and who was one of the principal men of Cholula at the time of the Conquest. It was translated into the Spanish language, and I copied it from the MS. in possession of Don José María Reyes Ramírez, at Cholula. The original may still be in existence, though its whereabouts is unknown. It bears date 1555.

² I found this document in possession of Don Ignacio Canto, at San Nicolás de los Ranchos. It was originally written in Nahuatl; but I only saw the Spanish translation, which, for the sake of brevity, I will hereafter call *Junta de San Nicolás*. The meeting took place on 12, 13, and 14 October, 1566.

with a bee at his lips) became hereditary names. Thus, in the sixteenth century, the condition was very similar to that now prevailing in the pueblos of New Mexico, where every Indian has his native name, and a Spanish family appellation besides. In Mexico, subsequently, the Indian personal name has often become his acknowledged family one, and he receives, when baptized, a Spanish personal name. Thus, Joaquin Tepoztecatl and Santiago Xicontencatl are persons well known to me. All this corroborates what has already been stated elsewhere, that the Indian, before the Conquest, had only a personal name, and that it was the *kin*, *gens*, or *clan* which alone possessed a generic appellation. Of such names of kinships, traces still remain in the family names of many pueblos of Cholula: for example, Cuauhtli (eagle), Tochtlí (rabbit), Tecuhtli (chief).

In the designations used for relationships there are no reminiscences left of an older terminology than those which I have mentioned in my essay on "Social Organization and Mode of Government of the Ancient Mexicans." While a great many terms enumerated in that paper still remain in use, they have lost the signification which they had before and at the time of the Conquest. No other limitations to marriage are now known but those established by the Church, which are, officially at least, strictly followed. The introduction of civil marriage has of late again disturbed marital customs, and will tend to obliterate what may have been handed down from ancient times. Thus it interferes with the force of parental authority. Previous to the first Provincial Council of Mexico, held in 1555, it was "the custom among the Indians not to marry unless with the license of their principal men, or to take a wife unless given by their hand." This custom was a consequence of gentilism, and of organization by kin, and was done away with by this Council on the ground that

"matrimony does not enjoy that liberty among free persons which it should have."¹ But to the authority of the kindred succeeded that of the parents on both sides. I was present at the pueblo of Coronanco, or Coronango, when the question of paternal authority was the subject of an interesting discussion. Now, in the course of a few years, civil marriage will probably do away with the last formal obstacle of this kind.

It was, and still is, always the young man who sends for the young woman; and, formerly, special envoys were employed for that purpose, or the father made such application. In 1581 the girl was still actually purchased, "so that he who had daughters considered himself as richer than he who had sons, contrary to the opinion of the Spaniards." The girl brought nothing but her clothes, and the bridegroom bore all cost of the festival.² A similar custom still prevails among the Indians of the New Mexican pueblos.

An Indian marriage at Cholula, and in the district, if the parties are wealthy, is a protracted festivity. After the blessing in church, the attendants, headed by the officials of the pueblo, all go to the bridegroom's residence, where they are treated to chocolate, *atolle*, and *tamales*. Thence they go to the house of the bride to receive a similar welcome; then back to the bridegroom's house to partake of a formal meal. Afterwards the whole crowd returns to the home of the bride; and, loading themselves with her wearing-apparel, trinkets, the *metates*, *metlapiles*, and other cooking utensils, they carry them

¹ *Concilios Provinciales, Primero y Segundo, celebrados por la muy Noble, y muy Leal Ciudad de México*. México, 1769. Cap. lxxii. p. 147.

² *Relacion de Cholula*, MS. § 13: "Hase usado siempre, y se usa hoy, que las mugeres casan sin dote alguno, sino el vestido que llevan encima, y siempre demandan ellos á ellas, sin moverse de parte de ella el matrimonio, en el cual el novio hace la costa á toda la parentela, y así se tiene por mas rico y dichoso el padre que tiene hijas, que no el que tiene hijos, al revés de los Españoles." I was also told, and state it for what it may be worth, that it is still customary to send two principal men to beg for the girl. Compare *Social Organization*, p. 620.

in formal procession, with the bride herself, to the new home. There the young couple sit down under the image of the patron saint, and all the attendants take formal leave of them, accompanying their greetings with more or less sound advice. This was formerly done by an old man in behalf of all, but now each one performs it on his own account; so that the whole ceremony to this point is not only a long but also a very dreary affair. But afterwards, dancing begins to the sound of the flute, the *psalterio*, the *bajo*, etc.; *pulque* circulates freely; and a noisy festival is kept up in the court of the bridegroom's residence, sometimes for three days in succession.

Until the laws abolishing communal tenure of lands in Mexico were promulgated in 1857, any newly married pair, whose parents could not boast of worldly possessions, by applying to the authorities of the pueblo, might secure a tract of cultivable soil. Although the communal lands are now divided into private possessions, it often happens that when a young couple starts in the world the municipal authorities apply to one of the richer inhabitants for a parcel, which he donates to the new beginners. The original grants of the Spanish government conveyed ample ground to the Indian settlements. The original *Merced* to the pueblo of Cholula, dated 27th of October, 1537, comprises "one *legua* in every direction from their church,"¹ or 4 square *leguas*, equivalent to 17,174 acres, nearly three fourths of a township in the State of Illinois. To the pueblo of Cuauhtlantzinco $4\frac{1}{2}$ *caballerias* were originally granted by *Merced*, confirmed 14 June, 1587,² to which, in 1716,³ there were added 4 *caballerias* more. As the *caballeria* is equal to 12 *fanegas*, or about 250 acres, the pueblo possessed

¹ *Merced de Cholula*, MS. Copy taken from the archives of the city.

² *Testimonio de la Merced de San Juan Cuauhtlantzinco*, MS., accompanied by a plat. Copy of both in my possession.

³ *Auto de Posesion del Rancho de Jesús Nazareno*, MS.

a communal area of 2,125 acres. The present population is 1,447 souls.¹ In regard to Cholula, we must not overlook the fact that the grant in question also included the pueblo of San Andrés Cholula. If we add the population of the latter to that of the city, and also that of San Rafael Comac,² the 4 square leagues now support a population of at least 7,000 souls; one inhabitant to $2\frac{1}{2}$ acres—and Cuauhtlantzinco, one to $1\frac{1}{2}$ acres—originally granted. These figures are instructive as illustrating, not the density of the Indian population, of which they give no correct idea, but the slight needs of the aborigines, because of their simple and primitive mode of life.

The simple custom of carrying the bride to her new home, together with the grinding-slabs, the pots, pans, and cooking utensils, is not without significance for the house-life of the aborigines of Cholula. It is analogous to the custom practised before the Conquest, of placing by the side of the new-born babe, if a boy, a bow and arrow, if a daughter, a spindle-whorl,³ each symbolical of future duties. The woman furnishes the kitchen,—her future domain, where she rules supreme, doing all the work herself, or with help of young sisters, or other women. While I was at Cuauhtlantzinco, a young couple with one child, and with the wife's mother, moved into the house whose ground-plan is given in Plate X. Fig. 19. They slept in the deserted *sala*, where I also had my bed; and during my stay the other apartments—the kitchen and the storeroom—were organized. The women planted the hearth, for which they dragged loose stones into the roofless section (II.), and there they placed the *metate*; and it was only when the young husband returned from work

¹ Ramirez, *Estadística geográfica*, etc., MS.

² *Idem*. San Rafael was formerly a *barrio* of San Andrés Cholula.

³ Motolinía, *Historia*, etc., Trat. iº. cap. v. p. 37. Gómara, *Segunda Parte*, etc., p. 438.

at the railroad that he and his brother-in-law brought home a load of *maguey leaves*, with which to make a temporary roof. There is much in this custom, of the exclusive reservation of the kitchen for the women, like that of the New Mexican pueblo. There, what comes from outside the house, as soon as it is inside, is put under the immediate control of the woman. My host at Cochití, New Mexico, could not sell an ear of corn, nor a string of *chile*, without the consent of his thirteen-year-old daughter Ignacia, who kept house for her widowed father. In Cholula district (and probably all over Mexico) the man has acquired more power, and the storehouse is no longer controlled by the wife. But the kitchen remains her domain; and its aboriginal designation, *tescalli* (place, or house, of her who grinds), is still perfectly justified.

An Indian kitchen is a simply furnished apartment. There is no stove or range; there are no cupboards, no sink, or table, or chairs. In one corner of the place, three upright stones are set in the ground; this is the hearth. The fire is built inside of this triangle; and on it rests the *comitl*, *olla* (the pot or kettle) for boiling, or the flat *comalli*, on which the *tortillas* are baked. Except the *mctate*, and sometimes the pepper-mortar, and a few pots, jars, and pitchers, there are no other implements or utensils.

Indian food in the Cholula district corresponds in plainness with the simplicity of the arrangements of the kitchen. The rule is to take but two meals daily, one in the forenoon, from 7 to 9 A. M., the other in the afternoon, generally before sunset. The diet is almost exclusively vegetable. *Atolle*,—very much resembling liquid corn-starch, sweetened with brown sugar,—*tortillas*,—too well known to need any description,—or *tamales*, form the bill of fare for breakfast. *Tamales* are nothing else but North American mush, sometimes with slices of meat and peppers enclosed, and baked in corn-husks. For

the afternoon meal I have often seen only *tortillas* and black beans, *frijoles (etl)*.¹ More prosperous families fare somewhat better; but the three articles enumerated are always present, and no meal would be complete without them. Whenever there is any meat, it is generally chicken or turkey. The Indian household does not sit around a common table, but the members all squat down together on the kitchen floor. Forks and knives are not ordinarily used; and when I spent the night of the 3d of August at the pueblo of San Bernardino Chalchihuapan,² even the authorities of the village could not find a spoon for me to eat my *frijoles* with. The Indian is so accustomed to eat all his food with the *tortilla*,—which he folds in such a manner as to form a little scoop,—that fork, knife, and spoon are things for which he has no occasion. The *tortilla* has the advantage, besides, that the ladle is eaten with the soup, and the washing of dishes afterwards becomes very simple. Nevertheless the Indian of Cholula knows how to cook better dishes; but some of the ingredients for such cookery have to be imported, and therefore they are not often seen.

One of these luxuries is chocolate. Being a white man,—however much I might pride myself on my connections with Cochití in New Mexico,—at Cuauhtlantzinco I received my cup of chocolate every morning. Sugar belongs to the same category, and therefore sweetmeats are rare; and so is white bread. The last-named two articles, of course, have been introduced since the Conquest, but chocolate is well known to have been an aboriginal beverage. It is still beaten to a foam after being boiled, and is served with the froth upon it. Little, if any, milk is used, for the Indian is an indifferent dairy-man; in fact, he is almost awkward in his care and

¹ Molina, *Vocabularia*, etc., i. f. 64; ii. f. 29.

² The pueblo has 929 inhabitants. Ramirez, *Estadística*, etc., MS.

treatment of domestic animals. The old sister of my host, against my repeated formal protests, made me Spanish-Mexican dishes in profusion, and cooked many of them very well. It is evident that vermicelli soup, boiled rice, cabbage, carrots, potatoes, etc., boiled and served with beef (as *pachal*), green peas, even *chile relleno* (green *chile* stuffed with cheese), are no more Indian dishes proper, than are pastry or pies, for the simple reason that they have no ovens in which to bake them. The beehive-shaped *hornos* of New Mexico are unknown in the Cholula district, but they use a small hutch of adobe to dry their *saliniskas* in. The chicken pies, rabbit pies, etc., which they are said to have prepared and eaten at the time of the Conquest, were only *amales*, mush mixed with the meat of the animals named.¹ While, to a casual observer, the cookery of the Mexican Indian sometimes appears much more advanced than that of the New Mexican, we must not forget that in such cases the diet is always largely made up of Spanish dishes, only of rare occurrence, while the purely Indian food remains extremely simple, even on festive occasions.

When I was measuring the so-called Pyramid of Cholula, special Church festivals were celebrated in the Mexicaltineo quarter of the city. It is customary for the principal men of the ward or pueblo, on such occasions, to entertain the people in the court of one of their houses, and the *hijos* (sons, — as they call them, — or children) never fail to appear in numbers. After sunrise they file into the court and squat down to receive, each one, a cup of chocolate and four little loaves of wheat bread. After midday they return, and as many as have room squat down again in the yard, and the honored proprietor treats them to the following bill of fare: vermicelli soup, *amafilis*,

¹ I refer to Sahagun, *Hist. General*, etc., vol. ii. lib. viii. cap. xiii. pp. 297-300. He distinguishes, among the *amales*, between *simples* and *mesclados*.

tamales, beans, wheat bread, and *molle de guajolote*. This is a very ancient custom, and the *menu* may be considered a fair specimen of ancient Indian high living, with vermicelli soup and wheat bread as Spanish additions. But the *molle* is truly aboriginal, and consists of stewed turkey seasoned with red pepper. All things considered, the food of the Indians of Cholula is not very different from that of the New Mexican aborigines,—not even from that of the Iroquois. Apart from the chocolate (which is a natural product unobtainable at the north), its ingredients are reduced to corn-meal, beans, *calabashes* (corresponding to the northern squash), native fowls or game, and fruit. The fruit itself was also a foreign importation, as long as no pears or peaches were raised, and as plantains do not grow in the district. The Indians never cooked the fruit. My Indian boy from Mexicaltzinco, Sixto Garcia, at the end of every week begged a *medio* ($6\frac{1}{4}$ cents) for fruit (*para la fruta*). The habit of grinding corn well soaked, of making out of it thin cakes or mush, of boiling beans and *calabashes*, of broiling and stewing certain kinds of meat, forms the substance of the knowledge of cookery which they had acquired before the Conquest. The advance they had made over the northern Indians is reduced, therefore, to the *tamales*, a composition of mush, meat, pepper, and sometimes of fruit like *ahuacate*, or even the exotic banana, and to a more perfect and varied seasoning. This comes from a greater abundance of material. Odoriferous and medicinal herbs are very common, and many of these are eaten uncooked. Green and red pepper, however, always has been the main spice. Salt is less used, as it was anciently an object of importation.¹ The *tortillas* are always made without salt, but it is sometimes strewn over them when eaten; or slices of *ahuacate*, green *chile*,

¹ Rojas, *Relacion*, etc., MS., § 30: "La sal que en esta ciudad se gasta es de las salinas de Axuchitlan, que es veinte leguas de aquí . . ."

etc., are folded or rolled up in the soft elastic *tortilla*, making new combinations according to the taste of the eater.

The preparation of the food is exclusively the woman's work, but from its simplicity it does not occupy much of her time. She has to grind twice a day,—which is her principal kitchen-work,—for the *tortillas* are better hot than cold, and the preparation of the dough is immediately followed by its toasting on the *comal*, or platter. If she has a baby, the infant—while the mother grinds or cooks—is suspended from the kitchen roof in a square wooden box, without a cover, either bundled up in a *sarape*, or lying naked on it; and when the urchin cries, the hanging cradle is made to swing by a push of the hand. When not cooking or grinding, the woman mends the scanty clothing, or does some light work in the field, or manufactures something for sale at Cholula or Puebla. Wealthier people begin to furnish the *sala* with tables or chairs, but a bedstead is still very rare. The Mexican Indians, like those of New Mexico, sleep on the floor or on a few boards (*tarima*), wrapped up in or covered by a *sarape*. The bed is merely a mat (*petlatl*); when the family rises in the morning, the mats are rolled up and shoved into a corner. The Indian, when travelling on foot, often takes his mat along, as it is an excellent protection against rain.

Although the few tables and chairs of an Indian family are never found outside of the *sala*, still I have seen, in the kitchens, low stools used for seats. They do not resemble, except in size, the little three-legged sitting-blocks which I often used in New Mexico. My host at Cuauhtlantzinco took his meals on a small table, roughly made, about 0.60 metre (2 feet) high, and he sat by it on a stool proportionately low. Nowhere have I seen, however, the scooped-out *icpalli* which was in use at the period of the Conquest, and is still found in the New Mexican pueblos.

The most conspicuous piece of furniture of the *sala* is the altar. It is frequently only a wooden shelf, supporting an image, two little vases with flowers, which are daily renewed, and other little trinkets of clay or wood. Above the altar there hangs sometimes a large oil-painting of the Virgin. On festive days, wax candles are burned before it. There are a great many of these large-sized paintings in the State of Puebla,—some of them not badly executed,—the work of native artists.¹ I have also seen another decoration, which occasionally is found in the kitchen. The smaller jars, pots, platters, cups, etc., of the household, the painted *xicaras* of Olinallan, are hung very symmetrically upon the wall opposite, which is also adorned with flowers.

In the storerooms or storehouses are kept the maize, *calabashes*, beans, and pepper sufficient to last the family for a season. The most important tool is the spade, which is now of the North American pattern, although they still have an older kind, with a broad blade fastened to a long handle.

Next to the spade, in importance, comes the *machete*, now a heavy corn-knife, making a truly fearful weapon. Still I have not found the *machete* at Cholula in as common use as in lower districts. A long butcher-knife, however, is carried by almost every Indian. Pocket-knives are scarce, as the natives seldom have pockets, but carry their valuables either in a small leather bag beneath the shirt, or, mostly, in the scarf wound round their loins.

¹ The progress of art can be traced from original paintings dating from before the Conquest,—of which the *Códice Mendocino*, and the *Vaticanus*, also the *Aubin*, are imitations,—through the large paintings, of which each smaller sheet is devoted to a special subject, found in the Cholula district, down to the religious pictures after European models. The latter are, I presume, of the seventeenth century, and later. Those paintings in the Indian villages, like the *Códice Campos*, the *Mapa de Chalchihuapan*, the *Mapa de Tecuanipan*, etc., are an intermediate stage between the aboriginal and the later pictures.

Hoes are not as common as I expected to find them. The women sometimes use them in planting beans or *calabashes*, but generally the grains are covered with the foot. Formerly the planting was done exclusively in the rising moon.

The North American axe, the most efficient tool ever invented for clearing forests, is only now finding its way into these parts of Mexico of which I am treating. The narrow, thick iron wedge called by that name, a relic of the Old World, predominates here. We may wonder that the Mexicans did not sooner begin to use the broad, thin-bladed implement of to-day; but must not forget that Mexico does not furnish such occasion for its use as the United States, and that where tropical forests occur, even the great American axe is but a useful improvement, and not an absolute relief or remedy. It is known that copper axes were used by the Indians previous to the Conquest, and Dr. Valentini has given some of the forms of such ancient implements in his paper on "Mexican Copper Tools."¹

Saws and chisels are beginning to be introduced, but all implements of iron, of whatever kind, must always be considered as Spanish importations, or, at best, as improvements with change of material upon a very imperfect aboriginal model.

Most of the out-door labor devolves upon the men. The Indian is an early riser, starting regularly for work in the fields at from four to five o'clock in the morning, rarely as late as six, and taking his *tortillas*, etc. with him in the *sarape*; and he works till three or four in the afternoon, but sometimes only till noon.²

He tills the soil either as a day-laborer or as proprietor to a certain extent, but he also appears in the capacity of a

¹ *Proceedings of the American Antiquarian Society*, April 30, 1879.

² His daily wages are: as farm-laborer, 25 to 31¼ cents; as railroad-hand, 50 cents per day.

renter ; but as the plots of ground worked by him are small, the crops raised are in proportion. Still, as provisions are not stored for more than one season in advance, enough is left that may be sold.

Little traffic takes place between individuals at their homes. The custom of doing everything in common, that does not pertain strictly to domestic life, is so deeply rooted that the Indian and his wife will travel to market with a small load of any sort of produce strapped to their backs, or saddled on their donkeys. These rudimentary markets are held in almost every pueblo ; but a regular one is only met with in the city of Cholula, in which every kind of object is sold, such as pottery, portable clay stoves, ropes, flowers, trinkets, cotton goods, etc. Maize, wheat, barley, beans, etc., are also sold here ; and the old custom still prevails for a government official (the *Secretario del Ayuntamiento*) to furnish the measures, and from time to time to circulate among the crowd to watch that no abuse is committed.¹ This gives a very clear insight into what the aboriginal fairs were at the time of the Conquest, and reduces the exuberant description of the daily markets at Tenuchtitlan to a sober level.²

¹ This custom is related by Cortés, *Carta Segunda*, p. 32 : "Hay en esta gran plaza una buena casa como de audiencia, donde están siempre sentados diez ó doce personas, que son jueces y libran todos los casos y cosas que en el dicho mercado acaecen, y mandan castigar los delinquentes. Hay en la dicha plaza otras personas que andan continuo entre la gente mirando lo que se vende y las medidas con que miden lo que venden, y se ha visto quebrar alguna que estaba falsa." Bernal Diez, *Historia Verdadera*, etc., cap. xcii. p. 89 : "Y tenían allí sus casos, donde juzgaban tres jueces y otro como alguaciles ejecutores que miraban las mercaderías." This relates to the old pueblo of Mexico, but the market of Cholula forcibly recalled the picture. Cortés also says that they had no weights ! In some pueblos, it is still the custom in many *tiendas* to use round stones for weights, approximating quantity by pebbles.

² Cortés, *Carta Segunda*, p. 32, speaks of streets (*calles*) where certain articles were sold at Tenuchtitlan. These streets are only the rows of people sitting or squatting in the market-places, between whom the buyers circulate. Those who

It is not always the case that both man and wife go to market together. But there is not, in the Mexican Indian household, that coarse division of rights and duties peculiar to other tribes of aborigines. While certain branches of labor still pertain exclusively to the woman, who does not receive from the other sex the help regarded among ourselves as natural, yet she has become, since the Conquest, enough emancipated to be the companion of man, and not any more his chief tool and first chattel.¹ This is seen also in marital life. Perfect equality in social standing has taken the place of a shy relegation of the woman to the kitchen and dormitory. The enforcement of strict monogamy by the Church has officially had a powerful influence. I am sorry to be compelled to insist upon the term *official*, for in practice, I heard great complaints about looseness in intercourse. But even such looseness is seldom accompanied by brutal treatment of the weaker by the stronger sex. It is not the cold indifference of the New-Mexican Pueblo Indian, who, while his wife and daughter freely mingle in social gatherings on a footing of equality with himself, yet pays little attention to them when they are stricken down by sickness. The Indian of Cholula is not ostensibly tender, but he cares for his wife in her hours of need.

There is marked progress to be seen, for instance, since the Conquest, in the manner of attending to woman while in childbirth. Then the attendants on women were females, and there was not the care of a loving husband, equally anxious to preserve his wife and her child, but only that of the *kin*, desirous of increasing their numbers by seeing the offspring safely brought into the world. What became of the mother after-

sell the same things generally place themselves in the same row. The *portales* and booths are very simple contrivances, in which a mantle (*quachtli*) plays the chief part.

¹ *Social Organization and Mode of Government*, pp. 609-613.

wards was of minor importance. Therefore, whenever any birth was exceedingly difficult, and when even the most brutal remedies were of no avail, the suffering mother was left to die alone.¹ Such cruelties are not any longer committed.

The child is left solely to the mother's care; and there is no longer that separation by sexes, practised before the Conquest, which placed the boy, as soon as he was able to strike a blow, and to carry anything, under the exclusive control of the *kin*, in order to make a *man* out of him.²

In aboriginal times, both sexes kept rather aloof from each other in everything connected with rejoicings. While unmarried, the women gathered sometimes jointly with the men in the *cuicalli* (house of the song),³ but this has a suspicious analogy with the New Mexican *cachina*. In general, dancing was an entirely different thing then from what it is now. It was not so much a pastime as a religious ceremony, and women, as *minors*, played but a very subordinate role. I have not been able to find any aboriginal dances in the whole Cho-

¹ Sahagun, *Historia General*, etc., vol. ii. lib. vi. cap. xxix. p. 186: "Y si por ventura los padres de la paciente no permitian que despedazase la criatura, la partera la cerraba muy bien la puerta de la cámara donde estaba; y la dejaba sola; y si esta moria de parto llamábanla mocioaquezque, que quiere decir muger valiente."

² Compare the well-known pictures of the *Códice Mendocino*, Plates lviii. to lxii. inclusive; also, *Art of War and Mode of Warfare*, pp. 100 and 101, and *Social Organization*, etc., pp. 616-618.

³ Sahagun, *Historia General*, etc., lib. viii. cap. xvii. p. 305: "Y cada día á la puesta del sol, tenían por costumbre de ir desnudos á la dicha casa de cuicalli, para cantar y bailar." This custom of dancing naked recalls forcibly the *Cachinas* of New Mexico. The matter is placed in a worse light by Tezozomoc, *Crónica*, etc., cap. xviii. p. 278: "Á demandarles sus hijas y hermanas para que canten en el lugar de los cantares, de día y de noche que llaman cuicuyan." *Ib.*, pp. 279, 280: "Asi mismo habia casa de canto de mugeres que cantaban y bailaban, y aún se hacia alli gran ofensa á Nuestro-Señor, que comenzando el canto y baile y como era de noche, y los maesos estaban bebiendo y ellas tambien, venian despues al efecto con actos carnales, y disoluciones, que morian las mugeres por no dejar este vicio y pecado; llaman á esta tal caca cuicoyan, ó alegría grande de las mugeres."

lula district, unless it be at Santiago Xalitxintla. There, as I was told, in the month of July a Church festival is celebrated, and during the day masked Indians appear in the *plaza*, shouting like Apaches. (The term *Apache*, in the interior of Mexico, is synonymous with anything wild or fierce.) On the day of the Carnival a dance is performed which they call *huchuetque* (old or ancient). I did not happen to see it, but was told that there is, as in New Mexico, a female solo dancer, called the *malinche*. This would militate against the assumption of its being aboriginal. The *malinche* wears no head-dress, as in Cochití; she dresses in an embroidered white skirt and chemise, and, while the other dancers are all masked, she has her face bare, and one of her performances consists in making a doll bounce on a *reboso*. This feat is not new, as appears by the following extract translated from Father Bernardino Ribeira, called Sahagun: "The necromancer before mentioned performed another trick. He sat down in the market of Tianquiztli, calling himself Tlacavepan, or also Acexcoch, and caused a very small boy (*un muchachuelo*) to dance on the palm of his hand." The historian is alluding, not to what occurred at his time, but to a very old tradition.¹ But I certainly do not draw the conclusion on account of it that the doings of the *malinche* are only reminiscences of a long-gone past, any more than I should feel justified in connecting the toy-monkeys sold in the streets of Mexico and elsewhere, climbing up or riding along a string, with the doll dancing on the *malinche's* *reboso*. Still there is an undisputable analogy between these things.

The other dances generally performed are exclusively Spanish, or at least so mixed that the Indian element is hard to discriminate. The *Tlaxcaltco*² bears an aboriginal name,

¹ *Historia General*, etc., lib. iii. cap. ix. pp. 252, 253.

² This custom of naming the dances after tribes is ancient. Thus Sahagun,

but has a decidedly Spanish music. The *Mexicano* and the *Poblano* are what their names indicate ; so is the *Farabe*. The latter is generally danced by one or two pairs, sometimes on a low platform of boards, in order to produce a rattling noise. The name forcibly recalls the *Haravies* of Peru.¹ *Farabe*, in Spanish, signifies syrup. I shall not venture a definition of the word designating the dance, but it is certainly not Nahuatl.

The music or tune of these dances is rendered in a precise, correct, and expressive manner by the aborigines. Three classes of musical instruments are found in the district :—

1. Modern ones, of European invention and importation, or manufactured in Mexico.
2. Ancient types still in use and often of recent construction.
3. Old aboriginal instruments, now disused but still preserved as relics.

To the latter may be added the clay flutes and the perforated conch-shells, still occasionally met with about the Great Pyramid.

I have found many Indians capable of writing music, but while I offered liberal pay, could not induce them to copy for me a single piece. The songs of the pueblos of New Mexico are, like those of the northern Indians in general, a mixture of monotonous recitative and rhythmic whoops, without any pretension to either harmony or melody. But the Mexican Indian, while playing a song with pleasing accuracy, and even with feeling, on one of his instruments, will at the same time scream it in the most atrocious manner.

Historia, lib. viii. cap. xx. pp. 308, 309, mentions the *Uexotzincaiuhtl*, or the *Anaoacaiutl*, and the *Cuextecaiutl*, etc.

¹ The *Haravies*, or *Haravicus*, of the Ynca, but it evidently designates a singer. Garcilasso de la Vega, *Histoire des Yncas rois du Pérou* (a French translation by Baudouin of the celebrated *Comentarios Reales*), 1704, lib. ii. cap. xxvii. pp. 216–218. It has been, like everything else relating to the Indians, greatly expanded and correspondingly distorted.

The musical instruments which, while still in use in Mexico, are known to antedate the Conquest, are but three in number, one of which is already falling into oblivion. It is the *tosacatl* (sounding-cane), described to me as a long cane, bent round like an Alpine horn. I never saw one, but its sound is said to be a sonorous bellowing. The other is the *chirimla*. It is made of dark brown wood, called *tepchuaje*, brought to Cholula from Matamoros-Yzúcar, or near Atlixco. Its length is 0.46 metre (about 18 inches), and its width at the mouth is 0.06 metre (about 3 inches). It has eleven holes, irregularly arranged, and the mouthpiece is a thin plate of horn on a stem of brass. The noise produced by this instrument is a fit accompaniment to the shrill Indian voices, being horrible beyond all description. Nevertheless, the aborigines play it rhythmically very well, and feel as pleased with its heart-rending shrieks as with the softest and most silvery tones of a flute. The name *chirimla* is Spanish, and signifies haut-boy. But, while the present wooden instrument is evidently only the Spanish (or European) hautboy, there is a still older type, made of clay, occasionally exhumed about Cholula, much smaller than the *chirimia*, to whose affinity with the older type is due the hold it has preserved on the affections of the natives. The *chirimia* is the most popular Indian noise-maker, together with the big drum, or *tlapan-huehueltl*, erroneously called *teponastli*. It is a hollow drum, three-legged, made like a cylindrical barrel, with staves firmly jointed and glued, and covered at the upper end with a piece of tanned leather. The usual height of this is 0.76 metre (30 inches); its diameter 0.45 metre (18 inches); the legs are 0.07 metre (3 inches) high; and the thickness of the wood, which is pine, is 0.02 metre (0.8 of an inch). It is beaten with two drum-sticks (*tlaxixtli*) 0.34 metre (14 inches) long, having an elliptical head covered with deer-skin. I have seen larger examples,

but never smaller. The one copied was rather newly made, but the instrument is well known to have been in existence at the time of the Conquest. It is interesting to compare its present shape with the pictures found in older paintings. Thus, *a*, Plate XI. Fig. 4, is copied from Fray Diego Durán;¹ *b*, from the Códice Aubin.² Durán, as well as Tobar, depicts the *tlapan-huehuetl* as beaten with the hands, and it was formerly made out of the trunk of a tree properly hollowed, over which, at one end, a deer-skin or some other dried hide was stretched. All the older authors make more or less mention of this instrument, but more particularly Bernal Diez de Castillo, who says, when describing the upper platform of the principal mounds of worship of Mexico, "And there they had an exceedingly large drum, which, when beaten, gave a sound as if from the infernal regions, which was heard at more than two leagues off, and they said that the skin was that of large snakes."³ I can testify to the fact, that, in the dry and thin atmosphere, the beating of the *tlapan-huehuetl* is heard at surprisingly great distances.

This drum was exclusively employed for religious purposes, among which I include the dances. Every festival day the instrument is placed in front of the church, and is beaten at intervals for hours, the noise made being very similar to that produced by beating carpets.

The majority of the people call the big drum *teponaztlé*. This is a mistake, as the latter is almost the only representative of the third class of musical instruments enumerated; those which, although they have been in use after the Conquest, are now abandoned, and are only preserved as relics of days long gone by.

The true *teponaztlé*, represented on Plate XI. Fig. 5, repre-

¹ Lam. 19, cap. liv. vol. i.

² Page 81.

³ *Hist. Verdadera*, etc., cap. xcii. pp. 90, 91.

sents a plain instrument which I found in possession of Don Antonio Canto, at the pueblo of Calpan. The two tongues (Figs. *a* and *b*) are each beaten with a little stick, and the vibrations produce two different sounds, which, on account of the hardness of the wood, have even something metallic in their tones. In the Calpan instrument, *a* has the higher, *b* the lower tone, and it will be noticed that *a* is indeed 0.005 metre shorter than *b*. There seems to have been no thought taken in regard to the thickness of the tongues themselves, and the whole work shows that acoustics among the Mexican Indians were on no higher level than the other branches of knowledge. It is evident that the *teponastlé* was beaten while in a horizontal position. Not only do we have written statements to that effect, but Fig. 6, Plate XI., taken from the work of Durán,¹ gives an idea of how the larger instruments of this sort were supported. But I also saw, in possession of Sr. A. Chavero, a smaller *teponastlé*, which had evidently been suspended to the neck of the player. According to some authors, this little drum was used in battle by the war-captain, for the purpose of giving signals.

Among the relics of former times which are sometimes exhumed at or about Cholula, there occur other musical instruments now altogether disused, but which I shall mention again hereafter. Such are conch-shells, some of which I have seen of very large size, and with a number of holes in their lower volute, of which a specimen is now in the Peabody Museum, as also a small clay whistle or flute.

While passing once, in the month of July, through the pueblo of Santiago Momozpa, near Cholula, I witnessed a singular celebration. In front of the church most of the *mosos*, or able-bodied men, of the village were congregated, and a kind of military rehearsal was going on under the leadership of one

¹ Lam. 19, cap. liv. vol. i.

of their principal men. I could not regard the whole festivity as anything else than a comical drill,—a burlesque; still it forcibly recalled to me *la funcion del caballito*, so popular among the New Mexican pueblos. It is evidently of Spanish origin, and it may be a relic of the dramatic performances which were introduced by the Spaniards among the Indians, after the Conquest, to promote their education.

There is a peculiar attraction in the study of such customs as these. The festivals of the aborigines in the district of Cholula reveal a double organization, based upon different principles, for their civil affairs, and for their church matters.

I have already related the custom of the *principales* of the pueblo or *barrio* feasting the people on certain days. Upon inquiring into the nature of the dignity of *principal* man, I was told a different tale from that related in New Mexico. There, any one who has once been elected to the dignity of governor, or war-captain, is thenceforward regarded as belonging to the *principales*; here, one becomes a *principal* man through his connection with the Church. Rich people who bind themselves to work for the Church become *principales*. This is the concise definition which the Indians themselves have given to me of that office. It is evidently not hereditary, and looks very much like an ancient custom, a relic of primitive social organization which passed into church usages. These, who become principal men through merit, without thereby gaining any other benefit than that of reputation, are the last echo of the *tequihua*, the *cuanhchimcs*, the *otomies* of the tribes before the Conquest.¹ After that event, the war titles were taken away from the people, because only the habits of peace were allowed; but the custom remained of conferring honorary titles as a sole reward of merit, and the Church became the channel through which they could be obtained.

¹ *Art of War and Mode of Warfare*, p. 117. This title also corresponds to the Tecutli, or common chief. *Social Organization, etc.*, pp. 641-643.

The military organization of the natives fell into gradual disuse after the Conquest through its having become superfluous. Outside enemies did not affect the centre, and the tribes of the centre were no longer allowed to make war upon each other. Still there existed, as late as 1587, a war-captain (*capitan de la guerra*) of Cholula. That officer was at the same time *alcalde* (justice).¹ It is probable that, under the influence of two centuries of constant peace, the latter office prevailed, and the war-captain completely disappeared. When the uprisings against Spain began, in 1810, the primitive organization had been forgotten, and at that time, and ever since, the modern system of recruiting and volunteering has prevailed.

The blending of military offices with those of a judicial and executive character, though originally peculiar to Indian organization in Mexico, is shown to be still in existence in a document of the year 1566. That paper, which is an act of division of lands between the settlements scattered along the eastern base of the volcanoes, mentions the butcher (*el carnicero*)² as the officer to whom the publication or promulgation of a certain meeting's resolutions was intrusted. That officer was evidently the "cutter of men" (*tlacatecatl*), or one of the chief war-captains.

While such titles as were of a military nature have of course disappeared, there are still relics left of aboriginal designations among the present civil officers of the pueblos. Thus, the officers and *principales* are called in general *tiachcauh*. Elsewhere I have stated that this term, which means elder brother,³ was formerly used to designate the military leaders of the *calpulli*, or localized kins. The constables, or *alguazils*, bear the

¹ *Merced de Cuauhtlantzincó*, MS. "Domingo Gonzalez, Alcalde Mayor y Capitan de la Guerra de la Provincia de Cholula."

² *Junta de San Nicolás*, etc., MS.

³ *Art of War*, etc., p. 119.

native title of *topiles* (*topilli*, staff-bearers), from the staffs of office (often silver-headed) which they carry. But they are also sometimes called *teopixqui*.¹

It becomes interesting to compare the character of the present Indian with the description of him at the time of the Conquest. It has been insisted that a strong contrast then existed between the quietness of the native in daily intercourse, and his ferocity in warfare and in religious sacrifice. I have elsewhere explained that this contrast is merely apparent.² The Indian now is generally polite; that is, he uses, after the Spanish fashion, forms of outward politeness to keep you at a distance; but he is frank only in church matters, and wherever he is perfectly convinced that no possible harm may result to him from such frankness. In everything pertaining to his private affairs he is extremely reticent, and sometimes will hardly speak with sincerity even to the priest. The same thing is true in regard to the affairs of his pueblo. Never could I induce any one of the various municipal authorities to show me the original grants of their lands. In some places they refused; in others they promised, but kept on promising till it was too late, and I could stay no longer. Then I was bowed out with many professions of deepest regret at not having attained my object.

The difficulty attending the consultation of any documents in the hands of Indians is universal, and results from their superstitious regard for writings on paper, and consequently their overestimate of the value of such writings. Although a great many Indians can read and write, and the municipal authorities themselves would be disposed to favor the request of a well-recommended student to pursue his researches among the archives, the bulk of the people watch with the utmost

¹ The word *Topilli* is also old. *Teopixqui* means "messenger of God."

² *Social Organization*, etc., p. 624.

jealousy over their old papers. It is true, that from the time of the Conquest down, the importance of clinging to the titles which they received from the Spanish crown, as a defence against encroachments by private settlers, was constantly impressed upon the minds of the Indians by the clergy as well as by honest government officials, so that finally an almost superstitious importance was given not so much to the contents as to the paper itself. But the reluctance with which the Indian permits even a copy to be taken in his own presence has at its bottom an older idea; that is, the fear lest the power vested in the original may be taken away and transferred to the copy, and that the latter may become a weapon against the owner. This is a very old superstition, which I found existing to a still stronger degree among the New Mexican pueblos. I do not hesitate to regard it—though it is of course found in many other countries and on other continents—as having existed, under some different shape, in Mexico before the Conquest, and as having been since strengthened by the importance which became attached to written documents, and to their possession.

If it is not without difficulty that we can succeed in separating the relics of aboriginal times at Cholula from those which post-date the Conquest, in the matter of customs and house life, this becomes equally difficult in that of popular superstitions. I have already mentioned the secret worship of stone statues in the caves contained in the crest that runs from the Popoca-tapetl northward to the Yztac-cihuatl. A similar cult is observed in the monte of the great volcano, on its southeastern slope. The Indian selects All-Saints day for his purpose, and spreads before one of his uncouth statues a mat, on which he places a bottle of pulque or *aguardiente*, some tortillas, and paper. My informants could not state whether the paper is burnt or not. This custom, though it savors some-

what of antiquity, still bears the stamp of a Church ceremony carried to excess, and consequently prohibited and still practised in secret. There is, at all events, a mixture of the two, and it becomes very difficult to determine how much of it belongs to one, and how much to the other. Even the use of copal for incense on such occasions is not strictly evidence of an aboriginal practice. There is more of this to be seen in the usages which are still sometimes observed at burials. If they think the officiating priest does not notice, the mother will hide a little jar with human milk or tortillas in the grave of her child, and, if questioned, she will confess that she believes the soul needs some nourishment until it reaches heaven.¹

To discriminate between ancient and modern ideas in regard to spectral apparitions and witchcraft is also a very intricate task. I am inclined to believe, however, that the phantom of the "dead man" (Miquiztli), whose nocturnal sobs they occasionally profess to hear, antedates the Conquest, and is in fact the "white woman" (Yztaccihuatl, or Cihuacohuatl, of many authors), also called the "weeper" (Llorón, Spanish).² But the belief in witches has a great many points of resemblance also to the tales circulating throughout Europe in the seventeenth century. There is much more of a

¹ Not only is this done, but if the deceased be a girl, a rod ("vara de membrillo") is placed by the body, that she may defend herself from the monsters which threaten her on the road to paradise. That this is an old pagan custom is seen from Torquemada, *Monarchia*, etc., lib. xiii. cap. xlvii. p. 527.

² Sahagun, *Historia*, etc., lib. v. cap. xiii. p. 17: "Otra manera de fantasma aparecía de noche, que era como un difunto tendido, amortajado, y estaba quejándose y gimiendo." *Id.*, lib. xii. cap. i. p. 4: "La sexta señal, ó pronóstico fué, que se oyó de noche en el aire una voz de una muger que decia: O hijos míos, ya nos perdemos! algunas veces decia: O hijos míos, adonde os llevaré?" Tezozomoc, *Crónica*, etc., cap. cvi. p. 682: "Y que tengan gran cuenta de oír de noche, si anda la mujer que llama el vulgo Cihuacohuatl, y qué es lo que llora." — Torquemada, *Monarchia*, etc., lib. vi. cap. xxxi. p. 61.

purely aboriginal character in some of their ideas about sorcerers which still exist. The same stories about their changing themselves into animal forms at pleasure, which are found in the older authors on Mexico, still circulate now. But the sorcerer is especially the medicine-man of the natives. Rarely does an Indian apply to a regular physician, unless in exceptional or in surgical cases. For ordinary diseases he cures himself with the juice of one of the numerous medicinal plants growing about his home, which the medicine-man gathers and prepares for him, or which he may prepare himself. Even for a snake-bite (which is of rare occurrence), the old method of pricking about the wound with an awl made of deer prongs is still sometimes used. Not only the medicine-man or sorcerer, but a large proportion of the medicines used, are relics of aboriginal times.

The native method of curing disease has been transmitted by means of a structure to be found in almost every village. Frequently there are even several in one and the same pueblo. This is the vapor-bath (*Temazcalli*), the side-view and ground-plan of one of which (now at the pueblo of San Bernardino Chalchihuapan) are given in Figs. 2 and 3 of Plate XI. The arrangements of the bath are evident from the plan. After the water in the jar at *a* has been boiling and steaming for some time, the patient enters the cupola through the passage, which afterwards is partially closed, so as to admit a sufficient supply of air with the steam. From time to time bowls of steaming water are handed in to the bather. In this vapor-bath sometimes twelve hours are spent, to which there generally succeeds an immersion in cold water. The *Temazcalli* is therefore used not only for cleanliness, but also for skin diseases, to which, for various reasons, the Indians are greatly subject. The Mexican *Temazcalli* is at present constructed of stone or of burnt brick, but I have also seen it of adobe;

but nowhere could I find an example which gave any clue to the shape of this "sweat-house" at the time of the Conquest. I saw a representation of one on an Indian painting of the sixteenth century at Cuauhtlantzinco, but was not allowed to copy it. From its analogy, however, to the "sweat-house" for men among more northern tribes, I should infer that its shape was like that, but probably less convex, and made of different material. At all events, the Temazcalli is perhaps the only vestige of an architectural character in the district of Cholula which still recalls both the house life and medical practices of the aborigines at the time of the Conquest.

In the foregoing sketch of some of the manners and customs of the aborigines of Cholula I have endeavored to show, in every instance, not only their present condition, but also what part of that condition may be the result of foreign influence since the Conquest, and at the same time of natural progress, leaving in many instances certain features which can be applied to the reconstruction of aboriginal life as it was when the Spaniards first saw it in 1519. I cannot lay claim to a full reconstruction of every feature of the district, but will at least attempt to give a general idea of what aboriginal Cholula really was.

There can be no doubt that the plain of Cholula, at the time of the Conquest, was occupied by a tribe of Nahuatl-speaking village Indians, which was not only autonomous, but absolutely independent. It was not subject to pay tribute to any other group of aborigines, and had no permanent alliances obliging it to assist neighbors.

The territory held by the tribe had no definite boundary except to the north, where, for an extent of about twelve kilometres (seven miles) the Rio Atoyac formed a dividing line between Cholula at the south and Tlaxcala in the north.

In the west the ranges of Huexotzinco and Cholula met, running parallel to each other to the south-southwest into the pleasant valley of Atlixco,¹ where both terminated; and the southern limit was equally indefinite. It is probable, however, that the present Rio de los Molinos was another of these natural boundaries, but not the Rio Atoyac in the east. The unoccupied region on which Puebla now stands was regarded as belonging to the tribe of Cholula, and the eastern portions of its territory extended even still farther. The "range" (for territory or domain it cannot be properly called) of Cholula, therefore, touched the range of Tlaxcala in the north, that of Huexotzinco in the west, Quauhquechollan, or Atlixco, in the southwest, waste lands in the south, and in the southeast Teccalli and Tecamachalco. The situation of Cholula was an almost ideal tribal area, with its confines in the south and east completely uninhabited, while the central and northern parts formed the inhabited sections.

We have no definite statement concerning the numbers of population. The descriptions of the conquerors cannot be taken as facts, only as the expression of feelings, honestly entertained, but uncritical. The most circumstantial of the

¹ Besides the fact, that Calpan and S. Nicolás de los Ranchos belonged until within a few years to Huexotzinco, we have documentary proof from the "Archivo General":—

Vol. iii. fol. 353. *Petition de los Indios de Cholula*, for land in Atlixco. 1551.

Vol. xv. fol. 18. *Merced á Juan del Castillo*, proving that the Range of Calpan extended to the road from Cuaco to San Baltásar. 1589.

Vol. xxii. fol. 111. *Merced á Antonio Ordaz*. The "ranchos" of Santiago and S. Nicolas "en términos del pueblo de Calpan."

Vol. xxiii. fol. 128. *Merced á Benito Sandianior*, "en términos de la ciudad de Cholula cerca del pueblo de San Buenaventura sujeto al pueblo de Calpan." This is very positive.

Vol. xxiii. fol. 171. *Merced á Juan Centellas*. In the district of Calpan, "en el pago de San Benito."

All these data, and others which I forbear quoting here, are positive enough to warrant my construction of the map of Cholula in 1519.

eye-witnesses of the Conquest, in regard to Cholula, is Bernal Diez de Castillo, and his statements are very valuable. After the Spaniards left Tlaxcala, they reached the banks of the Rio Atoyac on the same day, and encamped for the night. The place is so described that I was able to recognize it as due north of the pueblo of Xoxtla in the municipality of Coronanco. The distance from Cholula is not quite three and a half leagues in a straight line (15 kilometres = 9 miles), but Bernal Diez says it was "more than a small league" (*obra de una legua chica*) from it.¹ This would place the outskirts of Cholula very near the present pueblo of Santa Maria Coronanco. That a settlement existed on that site is shown by several proofs.

1. Tradition, current over the district, that the pueblo of Coronanco was in existence there before and at the time of the Conquest.

2. Fragments of pottery together with obsidian, scattered in quantities through and around the village.

What Bernal Diez took for the outskirts of Cholula was only a village belonging to the tribe, perhaps the most northern one, but of this I am not positive. Between Coronanco and Cholula itself, however, there was no connected settlement, — only one place, near Santa Barbara Almaloya, showing traces of aboriginal fragments antedating the Conquest. Bernal Diez himself, in accordance with the other eye-witnesses, gives the best proof of this by stating that the Tlaxcaltecos who accompanied Cortés were, at the request of those of Cholula, left encamped in the field (*en los campos*) at less than two hours' march from the centre of that place, or between it and the site of Coronanco.² In that direction,

¹ *Historia Verdadera*, etc., cap. lxxxii. p. 73.

² *Ibid.*, cap. lxxxiii. p. 77. Andrés de Tápia, *Relacion*, etc., p. 573.

therefore, the population of the range was not so considerable in 1519 as it is now. It is a striking fact, besides, that nowhere do the conquerors state that there were any settlements of consequence outside of the pueblo of Cholula proper; and this I have found to be fully confirmed by my examination of the ground, whose results are embodied in the map annexed. Even supposing, what is by no means certain, that all the places marked there as in which traces of pottery with obsidian are now to be found, were indeed inhabited when the Spaniards came, their number is not considerable and their extent always small, showing that the tribe of Cholula occupied in fact only one large pueblo, with a few — not more than twenty — small groups scattered over a certain portion of its range, of which perhaps two deserved the title of villages.¹

This central pueblo, which the conquerors dignified with the title of a "city," was certainly a populous Indian settle-

¹ Gabriel de Rojas, *Relacion*, etc., § 11: "Esta ciudad es corregimiento por sí y cabecera de doctrina en todo su término, en el cual no hay poblazon formada, sino algunos alqueriguales y habitaciones de indios donde tienen sus heredamientos y sementeras (que en su lengua se llaman milpas). Acuden todos los Domingos y fiestas principales á oír misa y sermon al monasterio desta ciudad, salvo algunas fiestas del año que los religiosos de él salen á visitarlos y confesarlos, y los dicen misa en las ermitas que por las estancias ó alquerías hay." This quotation is very positive, — it shows that there were no large settlements outside of the young "city" in its whole district. That district included, then, the Range already stated, of which there is ample proof. Thus, I found in the "Archivo General," at the city of Mexico, the following indications, between the years 1542 and 1641: —

Vol. xx. fol. 64. *Merced á Juan Alonzo de Castaño*, — in the "pago de Malacatepec."

Vol. xxiii. fol. 114. *Merced á Luis de Cabrera* — "pago de Cuezcomac."

Ib. fol. 115. *Merced á Benito Sandianes*, — "ermita de Sta. Maria Zacatepec."

Vol. xxiv. fol. 30. *Orden al Justicia Mayor de Cholula*, — "Zacatepec."

Ib. fol. 69. *Merced á Pedro Cabrera*, — "estancia de Tlaxcallantzinco."

Vol. xxviii. fol. 56. *Merced á Francisco Rodriguez*, — "pago de Sta. Clara Xocoyucan."

By referring to the map, it will be seen that these "Mercedes" are all located within the district of Cholula, and some very near to its confines.

ment; but, fortunately, we have the means for determining a maximum area beyond which it cannot have extended at that time. The grant, dated 27th October, 1537, creating the pueblo a city (*ciudad*), with the title of San Pedro Cholula, fixes the communal lands thereof at two square leagues. Within that area, therefore, must have been not only the houses, but also the cultivated plots (*labranzas*); only the six original quarters (*barrios*) of the pueblo which are represented on the old map of 1581, and whose names can be partly re-established from the books of the church.

These six quarters were scattered, and not contiguous blocks, as now. The space now occupied by the convent, the zócalo, the market, and several blocks of to-day beyond it on all sides, was only occupied by mounds of worship, by the huge "Tianquiz," or Indian market, and by one large official house, or "Tecpan."¹ Another "Tecpan" stood farther south, about seven blocks from the present market (in the Calle de Herreros), or nine hundred metres (two thirds of a mile) south-southeast of the convent.² The dwellings lay irregularly scattered among the cultivated patches. The great pueblo of Cholula itself was therefore a group of six distinct clusters, agglomerated round a common market.

I have already stated that we lack all reliable data concerning the numbers of population at the period of the Conquest. From what I have now said, it must be inferred that even the comparatively moderate figure given by Torquemada,³ of

¹ Gabriel de Rojas, *Relacion*.

² In the Calle de Herreros, south of the present post-office, there stands an old doorway, which bears the following inscription in Nahuatl: "Icni ocan ocan Tecpan, oican ichanca Antonio de la Cruz," — Here was the Tecpan, where now is the house of Antonio de la Cruz.

³ *Monarchia*, etc., lib. iv. cap. lxxix. p. 522: "En la señoría de Cholulla, quarenta mill." Lib. iii. cap. xix. p. 281: "Quando entraron los Españoles, dicen, que tenia mas de quarenta mil vecinos esta ciudad."

40,000 souls for the whole tribe, is in excess of the truth. If we place the aboriginal population of Cholula, in 1519, at 30,000, we may be within the limits of truth.¹

Before proceeding to the other features of the great central pueblo, it is well to cast a glance on its relations to the outside settlements of the tribe. The tie which bound them to

¹ Two reasons are assigned for a large decrease of the population of Cholula between the years 1519 and 1546. The earliest one is the so-called *matanza de Cholula*, or the slaughter committed by order of Cortés in October, 1519. This bloody episode of the Conquest was not altogether unjustifiable, for those Indian paintings of Cuauhtlantzinco to which I have given the name *Código Campos* represent the Cholultecos as really bent upon the act of treachery imputed to them by Cortés and his followers. But the number of the victims has been largely exaggerated. Confining myself to the statements of eye-witnesses of the event, I can establish the following data, by comparison of which something may yet be obtained.

The list is of course headed by Cortés, *Carta Segunda*, p. 20: "3,000, murieron en dos horas." (A. de Tápia and Bernal Diez give no figures.)

In the *Coleccion de Documentos Inéditos de Indias*, Madrid, 1877, vol. xxvii., there is (pp. 26, 27) the accusation, dated 8 May, 1529, by Nuño de Guzman against Hernando Cortés, and Charge No. 40 asserts that Cortés caused 4,000 Indians to be treacherously slaughtered by his men at Cholula. To this García de Lleréna replies in the name of Cortés (pp. 244, 245), that the latter had some of the Indians executed "fizo fazer xusticia de algunos Indios." Cortés then submitted the testimony of eye-witnesses, from which I select such as are positive.

P. 184. Martín Vasquez: "El dicho capitan é xente dió en ellos, en los quales se fizo castigo."

Vol. xx. of the *Biblioteca Histórica de la Ibéria*, Mexico, 1875, contains the following valuable historical document taken from the archives of the city of Tlaxcala, and copied by order of Miguel Lira y Ortega, Governor of the State: *Informacion recibida en México y Puebla el año de 1565, á solicitud del Gobernador y Cabildo de Naturales de Tlaxcala, sobre los servicios que prestaron los Tlaxcaltecos á Hernán Cortés en la Conquista de México*. It contains the depositions of seventeen eye-witnesses of the Conquest in relation to the aid furnished by the tribe of Tlaxcala, and Questions 5, 6, and 7 of the interrogatories are put in order to prove that in the case of the slaughter at Cholula the Tlaxcaltecos valiantly assisted the Spaniards.

P. 115. Martín Lopez says that the Tlaxcaltecos "mataron mucha gente."

P. 152. Pedro Moreno: "I mandó castigar é matar ciertos Indios por ello."

P. 180. Juan de Limpias Carbajal: "El dicho Marqués con la dicha su gente se aperció de guerra y así dió batalla á los Cholultecos hasta que los venció."

There are strange contradictions here. Cortés, in the first place, boasts of

Cholula was that of consanguinity. They were not subjected tribes, but small colonies from the main settlement,¹ who had moved out a short distance to avoid over-crowding, or (as was the case with Cuauhtlantzinco afterwards) on account of some difficulty or quarrel,² and who always remained in the relation

having had 3,000 Indians killed, but as soon as his action is brought against him as a crime, the number is reduced to "some" (*algunos*), in the interest of his defence. The witnesses from Tlaxcala and Puebla, however, who speak in behalf of the allies of Cortés, and whose evident tendency it was to make the Cholula affair appear important, are indefinite, but quite reasonable in their statements.

Subsequent writers have varied the theme in every imaginable manner. I quote extremes. Las Casas, *Breuissima Relazione*, etc., pp. 45-47, 5,000 or 6,000 killed. Fernando Pizarro y Orellana, *Varones Ilustres del Nuevo-Mundo*, Madrid, 1639, one chief executed. Cap. iii. p. 85: "Hizo Cortés degollar al Capitan Indio autor de aquella gran traicion."

That little could be gathered from eye-witnesses which was worthy of confidence in regard to the extent of the massacre, is further stated by Fray Toribio Motolinía, according to Juan Suarez de Peralta, *Tratado del Descubrimiento de las Yndias y su Conquista, y los Ritos y Sacrificios y Costumbres de los Yndios*, etc., etc., 1589, published by the "Ministerio de Fomento" of Spain, in 1878. He affirms that the celebrated missionary wrote about the Cholula affair (cap. xv. p. 113): "Si esto pasó, lo tengo por mal hecho, y lo condeno por crueldad; mas yo no hallo quien lo diga, que no se pueda recusar por apasionado."

If little light can be gathered directly, more is obtainable, however, in an indirect manner. Thus, Cortés says that the 3,000 people were killed in two hours, and that the whole affair lasted five hours. Bernal Diez, *Hist. Verdadera*, etc., cap. lxxxi. p. 77, reduces the slaughter to a few hours also. Andrés de Tápia, *Relacion sobre la Conquista*, etc., pp. 576, 577, alone extends the time of the butchery to two days. It is not likely that in a few hours every man of the Spanish force would have killed his Indian, and even that would not swell the number killed to beyond 500. Allowing 500 more for the Tlaxcaltecos, I cannot see that the diminution of the inhabitants of Cholula by that massacre could have been so very great.

¹ Rojas, *Relacion de Cholula*, 1581, MS.

² Cuauhtlantzinco was originally settled by refugees from Cholula, to whom some Tlaxcaltecos were subsequently added. It is stated that, when Cortés was still at Tlaxcala, some Indians from Cholula went to visit him, and to invite him to come to their pueblo. This is indeed confirmed by Cortés, *Carta Segunda*, p. 19, and Bernal Diez, *Historia*, etc., cap. lxxxi. p. 73. But the conquerors did not know the real facts of the case. The four Indians of poor appearance (*de poca valía*) came, not in behalf of the tribes of Cholula, but secretly and on their own account. However, upon the arrival at Cholula of the Spaniards, the

of kinsmen towards Cholula and each other. This is shown by many circumstances. Hence it follows that they must have shared in the government of the tribe. The question cannot yet be decided as to whether each one of these outside groups formed a *calpulli* or localized kin, or whether some were only fragments of a kindred group residing in the main pueblo. But analogy leads us to the inference that the Indian groups scattered outside of the main pueblo over the tribal range are posterior to the Spanish settlement; a fact of some importance for our appreciation of the remains of mounds still found in their vicinity.

While all the older authors agree in representing the tribe of Cholula as a democratic community, thus resting on the basis of autonomous kins or *gentes* congregated for mutual protection, they are not clear as to their number. Still, I incline to the opinion that the number was six, and that, as Torquemada states, the tribal council consisted therefore of six "speakers"¹ (*tlatoani*), analogous

Cholultecos seized those who had gone to Tlaxcala, with the intention of killing them; but the action of Cortés liberated the victims,—another fact which he and Bernal Diez also relate.

But they were thenceforth treated as traitors, and finally compelled to move out of the pueblo, thus founding San Juan Cuauhtlantzinco. Some Tlaxcaltecos joined them, for in the *Petición de la Merced*, 1557, MS., the name Xicotencatl already appears. All this is painted, with text in Nahuatl and Spanish translation, in the *Códice Campos*. That the relations of Cuauhtlantzinco were originally more cordial with Tlaxcala than with Cholula is also confirmed in *Merced de Cuauhtlantzinco*, MS. One of the Indians who had gone out to meet Cortés, and was afterwards persecuted for it, was Tepoxtecatl, an ancestor of Joaquin Tepotztecattl, to whose courage and friendship I have become so much indebted.

¹ I recall the six *barrios* on the map of Rojas. A positive statement is found in Torquemada, *Monarchía*, etc., lib. iv. cap. xxxix. p. 438: "Porque como aquella ciudad se repartía en seis grandes Barrios." Lib. iii. cap. xix. p. 282: "Gobernábase entonces por un Capitan General, elegido por la República, con el Consejo de seis nobles." That the six kins were distributed over the entire range is proved by Vetancurt, *Crónica*, etc., p. 173: "Los pueblos de visita son treinta y dos, en seis parcialidades repartidos." (This also shows that from

to the *Sachems* of northern tribes,¹ and the *Curacas* of Peru.²

The chief executive of the tribe of Cholula consisted of two officers, whose titles are given respectively as *Aquiach* and *Tlalquiach*. Their functions are commonly stated to have been of a religious nature, but at the same time they are decorated with the warlike appellations of "eagle" and "tiger," which shows that they were properly chiefs, with whose duties the Indian everywhere connected performances of worship or "medicine."³ These officers offer a striking analogy to the two war-chiefs of the Iroquois confederacy;⁴ but still greater is the similarity with the head executives of more Southern tribes, particularly of Mexico. I allude to the two chiefs of Mexico, of Chalco, of Tlaxcala, of Michhuacan, of the Quiché in Guatemala,⁵ and even of the Peruvian Ynca.⁶

1689 to 1746 eleven new pueblos were created.) For the office of speaker, or *tlatoani*, compare *Social Organization*, etc., pp. 646-658.

There is a faint indication that not only the gens and tribe, but even the *phratry*, existed at Cholula. Torquemada, lib. iv. cap. xxxix. p. 438, speaking of the six *barrios*, says: "Los tres tenían la parte de Motecuhçuma, y los otros no."

¹ Morgan, *Ancient Society*, part ii. cap. ii. pp. 71-74.

² I would merely call attention to the fact here that the 12 quarters (possibly 16) of Cuzco, were localized kins, *Ayllus*, and that the delegates, *Curacas*, one from each quarter, composed the supreme council of the Ynca tribe.

³ Torquemada, *Monarchia*, etc., lib. iii. cap. xix. p. 282, speaks of but one *capitan general*. Cortés, *Carta Segunda*, p. 21, says: "Excepto que se gobiernan como los de Tlascaltecal." Andrés de Tápiá, *Relacion*, etc., p. 575: "É en esta cibdad no había ningún señor principal, salvo capitanes de la república." The information I give is taken from Gabriel de Rojas, *Relacion de Cholula*, MS., § 17, confirmed by his contemporary from Tlaxcala, Diego Muñoz Camargo, *Fragments de Historia Mexicana pertenecientes en gran parte á la Provincia de Tlaxcala*, printed in 1870, p. 153. I give the names as I found them, but am satisfied they are much corrupted. *Aquiach* is probably Achcacauhtin. *Mendieta, Hist. Ecclesiástica*, etc., lib. ii. cap. xviii. p. 104.

⁴ Morgan, *League of the Iroquois*, book i. cap. iii. pp. 73, 74. *Ancient Society*, pp. 146, 147. Parkman, *Jesuits in North America*, Introd., pp. lxiv, lxv.

⁵ *Social Organization*, etc., pp. 659, 660.

⁶ There is abundant proof of the fact that the Yncas had two chiefs, the Ccapac Ynca (dispensing Ynca), and the Uillac Umy (speaking head). U

These offices are stated to have been for life,¹ but elective as to the persons.²

The duties of the governors consisted in executing the decrees of the tribal council, and in acting as "foremen" in its meetings. These were held not only for administrative purposes, but they also were the courts of the tribe. Hence, the governors were also the judicial officers.³

As at Mexico and among other tribes, the chief executive officers wielded a certain amount of power by choosing their subalterns. Thus, they might appoint and depose war-captains as leaders of special expeditions.⁴ But they had no supreme authority, and it was the tribal council who constituted the highest power.⁵ Cholula was therefore, to all intents and purposes, as perfect a military democracy as was any other Indian tribe in the sixteenth century.

But Cholula is also commonly represented as a holy city, a sacred place, a resort of pilgrimage for all the tribes around, those of the valley of Mexico included. Even Bernal Diez faintly alludes to such tales.⁶ It suffices to recall the state of intertribal warfare which prevailed in aboriginal Mexico, to establish the utter fallacy of this pretension, which the natives of Cholula even to this day assert, and which Rojas gravely advances in the year 1581.⁷ Cholula was constantly at war with one or the other of its neighbors, and between these struggles it had to repel the attacks of the Mexicans and their

¹ Gabriel de Rojas, *Relacion*, etc., § 13. *Testamento de Capixlahuatzin*, MS.

² Rojas, *Relacion*, etc., § 13, says that the succession took place by age. This is contradicted by Cortés, *Carta Segunda*, p. 21; and by Torquemada, lib. iii. cap. xix. p. 282; lib. xi. cap. xxiv. p. 351.

³ Rojas, *Relacion*, etc., represents the two governors in the same capacity as the *Cihuacohuatl* of Mexico. *Social Organization*, pp. 657-662.

⁴ Rojas, *Relacion*, etc.

⁵ Torquemada, *Monarchia*, etc., lib. iii. cap. xix. p. 282; lib. xi. cap. xxiv. p. 351.

⁶ *Hist. Verdadera*, etc., cap. lxxxiii. p. 77.

⁷ *Relacion de Cholula*, MS.

confederates. Such chronic warfare abundantly disproves the claims to religious respect brought forward in behalf of the pueblo. Even the pre-eminence which Quetzalcohuatl, the chief idol of Cholula, is said to have enjoyed over the whole of central Mexico is vigorously denied by the Indians of Tlaxcala and of the Mexican valley itself.¹ Nevertheless, since it is deemed that worship had a leading share in the government and organization of the Cholultecans, it becomes my duty to examine what this worship was, and on what foundations it rested.

We have the concurrent testimony of nearly all authors to the effect that the religious practices of Cholula were instituted by Quetzalcohuatl, and that he was not only the founder or reformer of religion, but according to some a social reformer also, and an inventor of arts and sciences. No other Mexican deity seems to appear under such a definite human form; no other has been represented as the subject of such apparently historical tradition, and none has in the past four centuries been made the theme of such extensive and varied speculations. It is impossible, in the present state of knowledge, or rather of notions current about it, to treat of aboriginal Cholula without approaching the question, Who or what was Que-

¹ The Indians of Tlaxcala claimed that Quetzalcohuatl was the son of their tribal idol Camaxtli. Motolinía, *Libro de Oro*, MS., cap. xxvii. p. 97. At Tlaxcala: "Aqui ofrecían al demonio despues de haver vestido las vestiduras é insignias del dios de Cholula, que llaman Quetzalcoatl, este decían ser hijo del mismo Camaxtle, las cuales vestiduras traian los de Chololla, que está de aqui cinco leguas pequeñas, para esta fiesta; y esto mismo hacían los de Tlaxcalla, que llevaban las insignias de ser demonio á Chololla, cuando allá se hacía ser fiesta, las cuales eran muchas y se las vestían con muchas ceremonias, como hacen á nuestros obispos cuando se visten de pontifical. Entónces decían: 'hoy sale Camaxtle como ser hijo Quetzalcoatl.'" This shows reciprocity, at best, if not indeed a tribal boast on the part of Tlaxcala of having an older and better deity than Cholula. But the so-called pilgrimage to Cholula is explained if we think of the fairs and market of that pueblo. Cholula, owing to its position, was a popular trading post, and those Indians who came from outside tribes to barter naturally brought a present to its chief idol.

tzalcohuatl? I trust, therefore, that the very long digression which I now must make upon that subject may be pardoned.

The word *Quetzal-cohuatl* signifies "bright, or shining snake,"¹ and is a very fair specimen of an Indian personal name. It has been made the subject of many interpretations of a symbolical tendency, which I cannot refer to here in detail. It is sufficient to state that it is a genuine Indian word. Our knowledge of Quetzalcohuatl is derived from tradition, and from those who saw the idols under whose shape he was made the object of worship, as well as the forms of worship themselves, or who heard both described by natives.

The earliest mention of it is of course that given by Cortés himself. His statement, that Montezuma told him how the Mexicans had been led to their country by a chief, who afterwards returned to his former home,² was interpreted as if that leader had been Quetzalcohuatl. It must be noted here, that the text of this tale of the Indian war-captain was, only a few years afterwards, completely distorted by Peter Martyr,³ but re-established subsequently through Gómara.⁴ Neither should

¹ Not "feathered serpent." The word is composed of *Quetzalli*, "pluma rica, larga y verde," (Molina, *Vocabulario*, ii. fol. 89,) and *cohuatl*, "snake." But *Quetzalli* only applies to the feathers in the sense of indicating their bright hues, for *Quetzalitztli* is emerald, and not "hairstone," for which the natives have the word *tetzontli*, from *tetl*, stone, and *tzontli*, hair. The words, therefore, are evidently intended to designate the bright and changing hues of the snake's skin.

² *Carta Segunda*, p. 25.

³ *De Novo Orbe*, Dec. v. cap. iii. fol. 189: "A certain great prince transported in shippes, beefore the memorie of all men liuing, brought our anncestors unto these coasts, whither voluntarily, or driven by tempest, it is not manifest, who leauing his companions, departed into his country, and at length returning, would haue had them gone back againe." There is not a word of all this in Cortés, neither in the report of Oviedo, *Hist. General y Natural*, etc., lib. xxxiii. cap. v. p. 285. But the speech of Montezuma when he sought to induce the Mexicans to become tributary to the Spaniards, as reported by Cortés, *Carta Segunda*, p. 30, and copied by Oviedo, *Ib.*, p. 296, so far resembles the report of Peter Martyr that it includes everything except the main point, namely, the coming by sea in ships.

⁴ *Segunda Parte*, etc., p. 341.

we overlook the fact that, about twenty years afterwards, Don Antonio de Mendoza, first viceroy of Mexico, very clearly applied this tradition, not to Quetzalcohuatl, but to Huitzilopochtli.¹ Andrés de Tápia and Bernal Diez do not mention the conversation in question, but the earliest document written on Mexican soil by Spaniards and bearing date May 20, 1519, recalls a tale very similar to the one attributed to Montezuma, whose authenticity is at least doubtful.² It was Fray Toribio Motolinía who first stated the tradition that Quetzalcohuatl was expected by the aborigines to return,³ and his contemporary Sahagun confirms it in so far as affirming that, when the Spaniards landed, the Indians regarded them as being the aforesaid deity with his followers.⁴ Durán, as well as Tezozomoc, is more positive, and more detailed yet. A

¹ Oviedo, *Hist. General*, etc., lib. xxxiii. cap. 1. pp. 531, 532.

² *Real Ejecutoria de S. M. sobre Tierras y Reservas de Pechos y Paga, pertenecientes á los Caciques de Axapusco, de la Jurisdiccion de Otumba*. Icazbalceta, *Col. de Docs.*, vol. ii. pp. 9, 10: "Lo mas importante y necesario es que dice estando el gran rey Acamapichtli el primero, el año de 1384, vino un hombre blanco con barbas y vestido como papa de la manera de esta tierra, al parecer sacerdote, con un libro en las manos." The mention of a precise date at such an early day, hardly one month after Cortés's arrival, and when intercourse with the natives was still necessarily very imperfect, owing to ignorance of their language, and because the Spaniards could not have any idea of their computation of time, makes it suspicious. The date 1384, as indicative of the election of Acamapichtli, is found in three writers, all of whom wrote at the close of the sixteenth century: Sahagun, Acosta, and Enrico Martinez. (The last only copied Acosta.) Compare Orozco y Berra, *Ojeada sobre Cronologia Mexicana*, in *Biblioteca Mexicana*, pp. 168-173. Acosta avowedly gathered his material from Tobar, and the "white man" with a long beard and a book is mentioned by the latter in *Códice Ramirez*, p. 81, and he is the only author of the sixteenth century who mentions the book. The *Real Ejecutoria* is not an original, but a copy made at the request of the Indians in the year 1617 (pp. 2, 24), and because the original was much mutilated, and the very part of it containing this story is where it was most damaged. It looks, therefore, as if the passage quoted was a reconstruction or insertion made in 1617, while the Padre Tobar was still alive, and the knowledge he had gathered still clear in the minds of the Indians whose faithful teacher he had so long been.

³ *Historia*, etc., Trat. i. cap. xii. p. 65.

⁴ *Historia General*, etc., lib. xii. cap. ii. p. 5; cap. iii. p. 7.

vast number of conclusions have since been drawn from this gradually expanded tale, and I think it advisable to devote more attention to it.

The collection of aboriginal tales and traditions made by order of the Bishop Zumárraga, and entitled "*Historia de los Mexicanos por sus Pinturas*,"¹ (a manuscript certainly written previous to 1536,) contains the history of Quetzalcohuatl also, but does not say a word of any prophecy about his return. Mentioning the surprise of the natives when they saw the Spaniards arrive by sea, it merely says that Montezuma thought his gods were coming (*que estos eran sus dioses*). It is very natural that the Indians should take for superior beings those who came by way of that ocean which was to the aborigines Tehuica-atl, — the water of heaven, — and it needed no mythical prophecy to cause them to be regarded as descended from heaven. If, therefore, the tradition of Quetzalcohuatl's return is genuine, as I am inclined to believe, there is absolutely no evidence to prove that this return was expected by sea, rather than by land, or, in general, from one quarter or country whatever in preference to any other.² The Spaniards were regarded as supernatural visitors, and, as Tezozomoc very plainly states, they were associated with Quetzalcohuatl only after it became known that they had not eaten the natives up, but on the contrary made them presents.³

¹ Original belonging to Sr. García-Icazbalceta, forming part of the *Libro de Oro*. Published by him in *Andes del Museo Nacional*, vol. ii. no. 2. My subsequent reference is to page 101. The manuscript bears on its title-page: "Esta relacion saqué de la pintura que truxo Ramirez, Obispo de Cuenca, Presidente de la Cancillería." The Bishop Ramirez de Fuenleal was at Mexico from 1531 to 1535.

² Sahagun, *Historia*, etc., lib. xii. cap. iii. p. 7: "Y como tenia relacion que Quetzalcoatl habia ida por la mar ácia el oriente, y los návios venian de ácia el oriente, por esto pensaron que era él." This is clear enough.

³ *Crónica Mexicana*, cap. cvii. p. 688. Andrés de Tápia, *Relacion*, etc., p. 569, an eye-witness, confirms this story.

The next allusion to the history of Quetzalcohuatl by any of the conquerors is that of Andrés de Tápia. It is doubly important, not only from the fact of its being very concise and plain, but also because it refers directly to Cholula, and comes from a person who, for a few years after the Conquest, held that pueblo in Encomienda.¹ Tápia says: "And in this city they held for principal god a man who lived in former times, and called him Quetzalquate, who, from what is said, founded that city, commanding them not to kill men, but to build houses to the creator of the sun and sky, wherein they should offer to him quails and other game, and that they should not hurt each other nor hate each other. They say that he wore a white robe like that of a friar, with a cloak over it, covered with red crosses."²

Soon after the Conquest the tradition or myth of Quetzalcohuatl became very prominent, until at last, in the seventeenth century, it was moulded into a historical *résumé*, principally by Fray Juan de Torquemada. The notions now current are largely due to that writer. But we must go back as much as possible to the original stories, including only such authorities as wrote within one hundred years after the Conquest.

I begin with the "Historia de los Mexicanos por sus Pinturas," christened "Códice Zumárraga" by Sr. Chavero. In point of date it stands nearest to the Conquest, and ought therefore to show the least influence of Biblical narratives infused into the minds of the Indians.

This authority positively and plainly states that Quetzalcohuatl was the third of the four principal Mexican gods, all sons of the original life-giving pair Tonaca-tecutli and Tonaca-

¹ Torquemada, *Monarchta*, etc., lib. v. cap. xii. p. 613. I doubt whether this is perfectly correct, as far as the duration of the Encomienda is concerned.

² *Relacion sobre la Conquista*, etc., pp. 573, 574.

cihuatl, and was called also Yahualli-hecatl. To him and to Huitzilopochtli the other two gods intrusted the decision of what should be done, and so they began, and "by commission and with the consent of the other two forthwith made the fire, and after that was made a half-sun, which not being entire shone but very little. Afterwards they made a man and a woman." In short, Quetzalcohuatl shared with Huitzilopochtli the work of that first creation, which included also that of the gods of the infernal regions, the deities of water and of rain. As the sun, however, was only of half size, it was not sufficient; therefore, Tezcatlipoca, one of the four principal gods, changed himself into the sun, and appeared as that luminary for $13 \times 52 = 676$ years. After this time Quetzalcohuatl forcibly took his place for a period of equal length; after which Tezcatlipoca overthrew him again, and Tlalocatecuhtli (god of hell) continued to be sun for 364 years. Then Quetzalcohuatl "rained fire from heaven, and deposed Atlalocatecli from being sun, and put in his place his wife Chalchiuttlique, who remained sun six times fifty-two years, which are 302 years" (this should be 312). To this last change succeeded the great cataclysm, which so closely resembles the Biblical story of the deluge, when "there fell so much water, and it rained so long, that the heavens fell in." This rather incommoded the gods who dwelt up above; so each one burrowed a path to the centre of the earth by the aid of four men specially created for that purpose, and Tezcatlipoca and Quetzalcohuatl changed themselves into trees, "and with the men and the trees and gods raised the heavens with the stars as it is now, . . . and afterwards, as Tezcatlipoca and Quetzalcohuatl walked through the skies, they made the road that goes through it, and on which they met, and since they remain in it, making it their home."

Thirteen years after this catastrophe, the gods determined

to make another sun, (the first one having been broken by the fall of the heavens), and "Quetzalcohuatl wished his son, who had no mother, to be the sun, and he also wished that Tlalocatecli, god of the waters, should make of the son whom he had by his wife, Chalchiutli, the moon. In order to do it they fasted, . . . drew blood from the ears and body in their prayers and sacrifices. Then Quetzalcohuatl took his son and threw him into a great fire, out of which he came forth as the sun to illuminate the earth; and after the fire had ceased to burn, Tlalocatecli came and threw his son into the ashes, and he came forth as the moon."

Quetzalcohuatl is next mentioned in connection with the various bands which are represented as having settled Mexico, when it is stated that "Mizquique went forth, carrying along with him for his god Quetzalcohuatl." But there is still another occurrence which has been subsequently connected with that name, and which the "Historia," etc. relates in the following manner: "They say, and show by their paintings, that in the first year of the sixth series of thirteen the Chichimecos were at war with Camasale (Camaxtli), and captured his deer by which he used to conquer; and the reason why he lost it was because, while straying across the fields, he met with a female relative of Tezcatlipoca, who gave birth to a son by him, whom they named Ceacalt (Ce-acatl). In this sixth series of thirteen (years) they paint how Ceacalt, after he was a youth, fasted for seven years, wandering alone through the hills, and drawing his blood, because the gods made of him a great warrior; and in that period this Ceacalt began to make war, and was the first chief of Tula, because its inhabitants selected him for their chief on account of his bravery. The said Ceacalt lived until the second year of the ninth series of thirteen, being chief of Tula; and four years previously he built at Tula a

great temple. While he was doing this, Tezcatlipoca came to him and said that towards Honduras, in a place to-day called Tlapalla, he was to establish his home, and that he should leave Tula and go thither to live and die, and that there they would hold him to be their god. To this he replied that the heavens and stars had told him to go within four years. So, after four years were past, he left, taking along with him all the able-bodied men of Tula. Some of these he left in the city of Chulula (Cholula), and from these its inhabitants are descended. Others he left in the province of Cuzcatlan (Cozcatlan), from whom are descended those who live there; and he also left some at Cempoal as settlers. Reaching Tlapalla, he fell sick the same day, and died the day following. Tula remained waste and without a chief for nine years."¹

I have copied these passages at length, because they represent:—

1. Quetzalcohuatl as an Indian deity connected with the earliest phases of the earth's changes, but without any historical features.

2. Ce-acatl, whom many are wont to identify with Quetzalcohuatl, as having been a cross-breed between the stock of Camaxtli (one of the principal gods) and a woman of terrestrial origin, and as an historical personage.

The next information in regard to our subject, in point of time, is derived from Fray Toribio Motolinía. This can be reduced to a few points:—

1. That Quetzalcohuatl was the son of a chief of Chicomoztoc (whence the settlers of Mexico came) and of his second wife, called Chimalmat, and that he was a distinguished and chaste man, who introduced good customs (*la ley natural*) among the natives.²

¹ *Historia de los Mexicanos por sus Pinturas*, cap. i. p. 85, cap. ii. p. 86, cap. iv. p. 88, cap. v. p. 89, cap. vii. p. 90, cap. viii. p. 91, cap. x. p. 92.

² *Libro de Oro*, MS., *Epistola Proemial*, p. 10.

2. That Quetzalcohuatl was the son of Camaxtli, principal god of Tlaxcala.¹

3. That he was a native of Tula, who built up (*salíó á edificar*, Tlaxcala, Huexotzinco, and Cholula, finally disappearing on the southern coast of the present State of Vera Cruz.²

4. That his return was hoped for by the natives, who worshipped him as god of the air or wind.³

Motolinía is strictly corroborated, if not followed, by Gomara,⁴ and there is something in his relation which recalls the subsequent tales of Diego Muñoz Camargo,⁵ and therefore leads to the inference that the distinguished ecclesiastic might have partly reproduced the local traditions of Tlaxcala.

About the middle of the sixteenth century we meet with many stories concerning Quetzalcohuatl in that anonymous chronicle of Indian origin, written in the Nahuatl language, with European letters, and called variously "Análes de Cuauhtitlan" and "Codex Chimalpopoca."⁶ It is easy to reduce these tales to a comprehensive and logical result, and from it we gather the following conclusions:—

1. That Quetzalcohuatl created the heavens and earth in the year one *rabbit*, in which year also the Toltecs were "founded." The latter is, however, related in a very indistinct and doubtful way.⁷

¹ *Libro de Oro*, MS., cap. xxvii. p. 97.

² *Ibid.*, cap. xxx. p. 105. *Historia*, etc., Trat. i. cap. xii. p. 65.

³ *Historia*, etc., p. 65.

⁴ *Segunda Parte*, etc., pp. 432, 448. The edition of this singular chronicle referred to is the one by Vedia, vol. i.

⁵ *Fragmentos*, etc., pp. 1, 2. They do not fully agree, however.

⁶ Published, with the Nahuatl text and two Spanish translations, one by the late Sr. Faustino Chimalpopoca-Galicia, and the other by Señors Gumesindo Mendoza and Felipe Sanchez-Solis, in *Anales del Museo*, beginning with no. 7 of vol. i., and carried (as far as it is in my possession) to no. 4 of vol. ii. inclusive, and therefore not complete as yet. It appears to have been made about 1558. Charles Étienne Brasseur de Bourbourg, *Popol Vuh*, 1861, Introduction, p. cxi.

⁷ *Anales de Cuauhtitlan*, p. 9.

2. That Quetzalcohuatl was born subsequently in the year one *cane* (Ce-acatl); that he was the son of Totepeuh (our hill), and of Chimalnau, who were both Toltecs, and that he was also called Topiltzin (our boy).¹

3. That after being one of the chiefs of the Toltecs, to which dignity he was raised after many years of wanderings and of a very abstinent and secluded life, taunted and tempted by demons, Quetzalcohuatl was moved by the arts of Tezcatlipoca to leave Tollan for Tlapallan, where he died. His ashes were carried to heaven by handsome birds; the heart followed, and became the morning star.²

There is in the "Anales de Cuauhtitlan" much that recalls both the "Codex Zumárraga" and the statements of Motolinía. Thus, we have again two Quetzalcohuatls, and the last of the two is made to descend from the Toltecs and from parents with analogous names. Furthermore, the story of Ce-acatl told by the Zumárraga manuscript agrees with the tale of the second Quetzalcohuatl in both instances. But the Cuauhtitlan record has, besides, the story of the transformation into the morning star, which story closes with the very singular and even suspicious words: "The ancients also say that this luminary disappeared for four days, during which time it dwelt in the infernal regions, and that four days afterwards appeared the great star, which was when Quetzalcohuatl took his royal seat."

We now come to an author of great renown, and who studied extensively the traditions of the aborigines, Father Bernardino Ribeira, known as "Sahagun," who treats of Quetzalcohuatl extensively.

1. He says distinctly that he was a man, but worshipped as god of the winds, who swept or prepared the road for the gods of water.³

¹ *Anales de Cuauhtitlan*, pp. 13, 14.

² *Ibid.*, pp. 14-22.

³ *Historia General*, vol. i. lib. i. cap. v. pp. 3, 4.

2. He lived, and was worshipped at "Tulla," and was the inventor of many useful arts. At Tula he was chief in religious matters only, while Uemac was the "chief of the Tultecos in temporal affairs."¹

3. The artifices and tricks of Tezcatlipoca, Huitzilopochtli, and Tlacahuepan drove Quetzalcohuatl away from Tulla to Tlapallan, whither he went in a "raft formed of snakes;" but it is not known "how and in what manner he arrived at Tlapallan."²

The traditions of Tlaxcala (I shall mention those of Cholula further on) already reported by Tápia, are further contained in the official "Relacion," written in 1581 by Gabriel de Rojas.³ They speak of Quetzalcohuatl as of a great captain who founded Cholula, and to whom the people afterwards paid divine worship.

A group of authors of the sixteenth century, to which I am now to refer, includes the Jesuit Father Tobar and the Dominican Durán. Tezozomoc, whose work is still incomplete as we have it, so closely agrees with the former, that we need not refer to him specially, and the same is the case with Acosta.

Tobar represents Quetzalcohuatl as a holy man who appeared in Mexico ages ago, and who, after preaching and teaching for some time, embarked on the sea towards the rising sun, promising to return at some future day. He also says that at Cholula the idol Quetzalcohuatl was the "god of the merchants."⁴

Durán is more detailed. He corroborates the statements of his Jesuit contemporary, but calls the mysterious foreigner

¹ *Historia General*, vol. i. lib. iii. cap. iii.-v. pp. 243-249; vol. iii. lib. x. cap. xxix. pp. 112, 113.

² *Ibid.*, vol. i. lib. iii. cap. vi.-xiv. pp. 245-259; vol. iii. lib. x. cap. xxix. p. 103.

³ *Relacion de Cholula*, § 14: "Un capitan que trujo la gente desta ciudad antiguamente á poblar en ella de partes muy remotas hácia el Poniente, que no se sabe certinidad della, y este capitan se llamaba Quetzalcoatl."

⁴ *Códice Ramirez*, i. p. 81, ii. cap. iv. p. 117.

Topiltzin, and says that he had disciples who preached his maxims, and who were called "*tolteca*, which signifies artisans or proficient in some art." He also states that the tricks and machinations of Tezcatlipoca drove him from Tula, and that on his way to the sea he carved upon the rocks crosses and images. At the sea-coast he spread his mantle on the waves and stood on it, and then made a sign with the hand over the robe, which began to float and carried him out of sight. But he also calls this strange person Uemaç, and attributes his departure, not only to Tezcatlipoca, but to Quetzalcohuatl also.¹

The last Indian author of the sixteenth century, although he wrote mostly in the seventeenth, is Fernando de Alba Ixtlilxochitl. I attach little importance to his statements, except as they are an echo, to some extent, of those of Juan Bautista Pomar, who was, like him, a native of Tezcucó, and who wrote a highly important "*Relacion de Tezcucó*" in 1583. Ixtlilxochitl makes of Quetzalcohuatl a contemporary of the Olmecs, and a predecessor of the Toltecs. He further states that he was also called Huemac, and that he planted and worshipped the cross, and that finally, after a long residence at Cholollan, he disappeared on the coast.²

Quetzalcohuatl is a word of the Nahuatl language, and the tradition therefore appears to be a Nahuatl tradition. It is somewhat startling, on that account, to find it among tribes that are not only of different linguistic stocks, but reside at a considerable distance from the high plateau of Mexico. Our investigation would be incomplete without a reference to these tribal tales. Among the Tzendals of Chiapas, the tradition of Votan, who is said to have been the first founder of that tribe, bears great resemblance to Quetzalcohuatl.

¹ *Historia de las Yndias de Nueva España*, etc., vol. ii. cap. lxxix. pp. 72 to 78; cap. lxxxiv. pp. 118 to 122.

² I merely quote one of his works, *Histoire des Chichimèques*, etc., cap. i. pp. 4 to 6.

Votan is reported to have called himself "Snake," and to have left the country after organizing its settlement.¹ Bartolomé de las Casas, and after him Antonio de Remesal, mention a tale according to which a band of twenty "holy men" landed on the shores of Tabasco, or Yucatan.² I lay no stress on all these reports, for they appear to me, at best, but confused echoes of the traditions of Quetzalcohuatl, gathered through contact with Nahuatl Indians. But the case is different with the Quiché tribe of Guatemala, and the Maya of Yucatan.

The traditions of the Quiché have been collected, like those of the Nahuatl, and the most complete, though by no means concise, statement of them, from the sixteenth century, is that singular gathering to which the Abbé Brasseur de Bourbourg has given the title of "Popol Vuh."³ It bears, in its cosmological tales, some similarity to the Codex Zumárraga. Four principal gods create the world, and one of these is called Gukumatz, shining or brilliant snake. Gukumatz, therefore, may be a parallel to Quetzalcohuatl, if not identical with him. There are other analogies which I cannot mention

¹ The tradition of Votan would be of suspicious origin, if his name were not in the so-called Chiapas Calendar. The earliest record of it which I find is in Nuñez de la Vega, — *Constituciones Diocesanas del Abispado de Chiappas*, Roma, 1701, Prólogo, Nos. 32 to 35, — which is the result of an inquiry about the antiquities of Chiapas by that bishop, in the year 1691. I have discussed this question in *Social Organization*, note 28, pp. 571, etc. Felix Cabrera, *Teatro Crítico Americano*, in Minutoli, *Beschreibung einer alten Stadt die in Guatemala (Neu Spanien) unfern Palenque entdeckt worden ist*, 1832, repeats, on p. 33, the words attributed to Votan, — "I am a snake (Culebra), because I am Chivim."

² Las Casas, *Apologética Historia de las Indias*, MS., cap. 124. Antonio de Remesal, *Historia de la Provincia de San Vicente de Chyapa y Guatemala de la Orden de San Domingo*, Madrid, 1620, lib. v. cap. vii. p. 247, copies from Las Casas.

³ *Popol Vuh, le Livre Sacré*, etc., Paris, 1861. I have expressed my views on this important work fully in two papers, "On the Sources for Aboriginal History of Spanish America," in *Proceedings of the American Association for the Advancement of Science*, vol. xxvii. August, 1878, pp. 328-332; and in *Notes on the Bibliography of Yucatan*, etc., pp. 30-32.

here. We have, therefore, in the Quiché tradition a figure resembling Quetzalcohuatl, under the name of Gukumatz, as an Indian deity connected with the earliest stages of creation.¹

But while we easily recognize that feature of the tale of Quetzalcohuatl in the *Popol Vuh*, we absolutely miss the other side of the story, in which he is represented as a man. This is the more noteworthy, since, in the traditions of Yucatan, the very inverse occurs.

The Bishop Diego de Landa, who, while a diligent persecutor of Indian superstition, was a no less diligent student of Indian antiquities, in Yucatan, has left us the following account: "There is among the Indians the belief, that over the Itzacs who settled at Chicheniza ruled a great chief called Cuculcan, and proof of it is the principal edifice, which is named Cuculcan. They say that he came from the west, but differ as to whether he came before the Itzacs, or with them, or after them. They say also that he was well formed, and had neither wife nor child, and that after his return he was held in Mexico for one of their gods, and called Cezalcouatl (Quetzal-cohuatl), and that in Yucatan they also regarded him as a god. . . . That this Cuculcan lived with the chiefs for some time, and, leaving them in great peace and friendship, he returned to Mexico."²

If now we consider attentively the various statements which I have collected, it must strike us:—

1. That the tale of Quetzalcohuatl is limited to tribes of Nahuatl stock, though it may exist among tribes residing south of their ranges.³

¹ *Popol Vuh*, Part I. Pré. p. 2, cap. i. pp. 6, 8, 10, cap. ii. pp. 20, 22. Part III. cap. i. pp. 194, 196, cap. ii. pp. 198, 202, etc.

² *Relation des Choses de Yucatan*, 1864, French translation by Brasseur de Bourbourg, pp. 34-36.

³ There is no trace of the Quetzalcohuatl myth in the traditions of Michhua-

2. That Quetzalcohuatl appears under two forms:—

a. As an Indian god, connected with the creation of the world.

b. As an historical personage.

To these I wish to add a third form, that of a Christianized Quetzalcohuatl, a product of the earliest teachings of the Christian faith mixed with the myths of the aborigines. It is even difficult to eliminate this post-conquistorial figure from the oldest recorded tales.

Thus, while we may conceive the deluge described in the Zumárraga manuscript as an aboriginal tale,—owing to the stories about “raising up” the fallen skies, and the origin of the milky way,¹—the story of Quetzalcohuatl sacrificing his only child, “who had no mother,” in order to convert him into the sun, is somewhat suspicious. In the Cuauhtitlan manuscript the following statements have a decided Biblical tinge:—

1. The wanderings, fastings, and temptations in the desert, before entering upon a public career.

2. The ascent to heaven and transformation into the morning star, after having passed four days in the infernal regions.

The Christian element becomes very plain, it even predominates, in the histories of Tobar and Durán. In them Quetzalcohuatl is no longer an Indian god or an Indian chief; he is simply a missionary performing miracles like those of the Bible, and teaching after the manner of the Apostles, if not of Christ himself.² Ixtlilxochitl finally makes him plant and

can, as far as these are known to me. Matias de la Mota-Padilla, *Historia de la Conquista de la Provincia de la Nueva Galicia*, cap. i. p. 21, mentions a deity whom he calls “Heri,” stating that he prophesied “la entrada de hombres orientales en sus tierras.”

¹ This tale is eminently Indian in form. This does not exclude the possibility of its existence outside of this continent, but I cannot enter upon any discussion of this point.

² I allude here to the statements of Durán, *Historia*, etc., vol. ii. cap. lxxix.

worship the cross in due form, thus paving the way for the subsequent hypothesis, that he was the Apostle St. Thomas.¹ I must state here that the cross, though frequently used previously to the Conquest by the aborigines of Mexico and Central America as an ornament, was not at all an object of worship among them. Besides, there is a vast difference between the cross and the crucifix. What has been taken for the latter on sculptures like the "Palenqué tablet," is merely the symbol of the "new fire," or close of a period of fifty-two years; it is the fire-drill more or less ornamented.² The names given to the cross which Quetzalcohuatl is said to have "planted" according to Ixtlilxochitl, — "Tonaca-qua-huitl," or wood of the body (in the sense of life), with the other qualification of "Quauh-cahuiz-teotl-Chicahualizteotl," wood of the god of time, of the strong god,³ — are terms which the early

pp. 72-78, and of Ixtlilxochitl, *Hist. de los Chichimecos*, Kingsborough, vol. ix. cap. i. pp. 205, 206. Sahagun, *Hist. General*, etc., vol. iii. cap. xxix. pp. 112, 113, and vol. i. pp. 243, 244, 257-259, is less tinged.

¹ Durán, *Historia*, etc., vol. ii. pp. 72, 73, is possibly the earliest author who connects Quetzalcohuatl with the Apostle St. Thomas.

² Compare the *Oxford Codex*, *Bologna Codex*, and *Vienna Codex*, in Kingsborough's *Antiquities of Mexico*, vol. ii. The gradual transition from the fire-drill to a cross very similar to the one of Palenqué, through mere ornamentation, is plainly visible.

³ *Hist. de los Chichimecos*, Kingsborough, vol. ix. cap. i. pp. 205, 206. For the etymology of the words, see Molina, *Vocabulario*, ii. fol. 88, "quahitl," "arbol, madero o palo"; fol. 12, "cauitl," "tiempo"; fol. 19, "chicactic," "chicanac," "cesarezia y fuerte, o persona anciana"; fol. 149, "Tonacayo," "cuerpo humano á nuestra carne." According to the same author, i. fol. 32, "crucifixo" is called by the Indians by that name, and also "cruztech mamaçouhticac," and "Cruz," "quahitl nepanuihtoc." The first is derived, of course, from "Cruz," from "titech," fol. 113, and from "mamaçoaltia," "crucificar o aspar á otro," fol. 51. It is therefore the description of the crucifix of the Church. The second, from "quanitl," wood or tree, and "nepanuihca," "castigar á otro con doblado castigo," fol. 68; a conception which has been imported since the Conquest. The adoration of the cross by the Indians of Mexico began at an early day, and spread with great rapidity. Compare Motolinía, *Historia*, etc., Trat. ii. cap. ix. pp. 137, 138.

Later authors in Nahuatl have changed the word for cross, or crucifix.

missionaries framed to impress the signification of the crucifix upon the Indian mind.¹ The proper word for cross, or crucifix, is simply *colotzin*, little scorpion (*alacrancito*), and I have heard it with the addition of "Santa Cruz," often used in the district of Cholula by the aborigines.

If now we eliminate these foreign elements, introduced by and since the Conquest, the remainder leaves Quetzalcohuatl as a man of note, whose memory was afterwards connected with dim cosmological notions. The basis of the Nahuatl creed was not a "great spirit"; that idea also filtered into it through Christian teachings. It was that "Tonaca-tecutli" and "Tonaca-cihuatl," the chief of "our body" and his wife, the woman of "our body," the life-giving pair, engendered four sons, who became the active agents of creation, while the parents themselves remained as "latent powers behind the throne."² These four gods were not all strictly symbolical of

Thus the Padre Ignacio de Parredes, *Doctrina Breve*, etc. (abstract made of his *Catecismo Mexicano*, and reprinted in 1809), renders "El persignum crucis" by "In Teoyotica Nemachiotiliztli," signifying "spiritual example," and uses the term "In Cruz."

¹ This is plainly stated by Torquemada, *Monarchia*, etc., vol. iii. lib. xvi. cap. xxvii. p. 202: "A esta Cruz, como no le sabian el nombre, llamaron los Indios Tonacaquahuatl, que quiere decir madero, que dá el sustento de nuestra vida; tomada la etimología del maíz, que llaman Tonacayutl, que quiere decir: Cosa de nuestra carne, como quien dice, la cosa, que alimenta nuestro cuerpo; y dixeron verdad, porque por voluntad de Dios, que lo puso en sus coraçones, entendieron, que aquella señal, era cosa grandiosa, y la començaron á tener en mucha reverencia."

² The first statements concerning Nahuatl mythology, with some degree of precision, are found in the *Historia de los Mexicanos por sus Pinturas* (Anales del Museo), vol. ii. cap. i. p. 86: "Paresco que tenía un dios á que decian tonacatectli el qual tomo por muger á tonacaciguatl ó por otro nombre cachequecalt, los quales se criaron y estovieron siempre en el trezeno cielo de cuyo principio no se supo jamas syno de su estado y criacion que lui en el trezeno cielo. Este dios y diosa engendraron quatro hijos." There is no mention of a single supreme being. Neither is any such belief mentioned by Motolinía, nor by Gómara, nor Sahagun. Even Tobar and Durán are silent on the subject. The *Anales de Cuauhtitlan*, p. 9, attribute the creation of the world to Quetzalcohuatl, and on p. 15 make him direct his prayers to "Zitlalihue, Citlaltónac,

the elements, though Quetzalcohuatl represented the air or winds,¹ but each was the tutelar deity of a particular tribe.² Thus Tezcatlipoca was the chief god of Tezcucó,³ Huitzilo-

Tonacacihuatl, Tonacateuhtli, Yeztlaquenzi, Tlallamanac, Tlallichcatl, que segun sabia y comprendia residian estas Deidades sobre nueve cielos Chiuchnanchnapanihcan." There is nowhere any trace of monotheism, until we come to Acosta, *Historia Natural y Moral de las Indias*, 1608, lib. v. cap. 3, p. 307. This is easily explained. As each tribe appeared with its tutelar deity at the head, this seemed to imply original monotheistic notions, and it was not noticed, after the first generation of Indians had passed away, that the tribal cult rested on an anterior one, whose basis was duality of sexes, and not a single individual power. Thus Tonacateuhtli and Tonacacihuatl disappear the further we go in the century. The *Spiegazione delle Tavole del Codice Mexicano*, in Kingsborough, vol. v., indicates the former idea of a man and wife,—the pair who gave life, but with variations. Mendieta, *Historia Ecclesiastica Indiana*, lib. ii. cap. i. p. 77, calls the first two divinities Citlalatonac and Citlalicue, who appear to be identical with Tonacateuhtli and Tonacacihuatl, for their names indicate respectively "body of the star" and "skirt of the star." The purest Indian conceptions of theogony, however, were preserved for us, as far as the Nahuatl are concerned, by Oviedo, *Historia General*, lib. xlii. cap. ii., iii., pp. 39–60. These are the famous interrogatories of Indians in the year 1538 for the purpose of ascertaining their creed. It results from these interrogatories that the original creative power is represented, not by one single power, but by a pair,—Famagostad or Tamagostad, and Cipactonal or Cipaltoval,—pp. 40, 41, 43, 44. The idea of a supreme deity called "Tloque Nahuacque Ipalnemohuani" is conveyed by Torquemada, *Monarchia*, etc., vol. ii. lib. vi. cap. viii. p. 21, but he speaks, not of one god, but of supreme gods, using the word as a collective name. "No es de menos consideracion, y advertencia saber, que esta condicion, y atributo, que los antiguos atribuyeron á los Dioses Penates, estos nuestros Occidentales dieron á los que tuvieron por Dioses supremos, llamandolos Tloquenahuacque, que quiere decir, junto, ó par de quien está el sér de todas las cosas, y tambien le llamaban Ypalnemohualoni, que quiere decir, por quien vivimos y somos." The idea of one single god is first found in Ixtlilxochitl, *Historia de los Chichimecos*, cap. i. p. 205, and he has evidently distorted and disfigured Torquemada, to whose work he subsequently refers.

¹ We find among the Nahuatl of Nicaragua a god of the winds called "Chiqonaut y Hecat" (Chiconahui-hecatl, Nine Winds). Oviedo, *Hist. General*, etc., lib. xlii. cap. iii. p. 52. In regard to Quetzalcohuatl the fact is too frequently asserted to need quotations.

² Torquemada, *Monarchia*, etc., lib. vi. cap. vii. p. 20, intimates as much, but his predecessor Mendieta is very positive, *Hist. Ecclesiastica*, lib. ii. cap. x. pp. 91, 92.

³ Mendieta, *Historia Ecclesiastica*, lib. ii. cap. x. p. 91. Juan Bautista Pomar, *Relacion de Tezcucó*, MSS.

pochtli that of Mexico,¹ Camaxtli the god of Tlaxcala,² and Quetzalcohuatl the principal divinity of Cholula.³ Furthermore, all of them, and not the last one only, appear in native tradition as historical personages;⁴ and in that respect Que-

¹ This is too well known to require any quotations. It was recognized at an early day, and even the *Hist. de los Mexicanos por sus Pinturas*, cap. i. p. 85, mentions it.

² Motolinía, *Historia*, etc., Trat. i. cap. x. p. 59. Id., *Libro de Oro*, MS., cap. xxvii. p. 97. Tobar, *Códice Ramirez*, does not speak of it, but Durán, *Historia de las Yndias*, etc., vol. ii. cap. lxxxv. pp. 126, 127, is the more positive about the fact. Diego Muñoz Camargo, *Histoire de la République de Tlaxcallan* (French translation in *Nouvelles Annales des Voyages*, 1843, vols. xcvi., xcix.), pp. 143, 146. Finally I refer to Mendieta, *Hist. Ecclesiástica*, lib. ii. cap. x. p. 91, cap. xvii. p. 103; and to his copyist, Torquemada, *Monarchia*, etc., lib. iii. cap. ix. pp. 258, 259, cap. xii. pp. 265, 266; lib. x. cap. xxxv. pp. 299, 300.

³ Andrés de Tápia, *Relacion sobre la Conquista*, etc., p. 574; *El Conquistador Anónimo*, p. 385.

⁴ There is not one of these four deities who is not declared to have been formerly a human being, by some author, or in some tradition. In regard to Tezcatlipoca we have the statements of Camargo, *Histoire de la Rép. de Tlaxcallan*, pp. 143, 146: "On regarde aussi comme des dieux Camaxtli et Tezcatlipuca qui vinrent de l'occident; mais ces prétendus dieux étaient sans doute des enchanteurs diaboliques et possédés du démon, qui pervertirent toutes ces nations." Sahagun, *Jib. i. cap. iii. p. 2*, lib. iii. cap. ii. pp. 243, 244, makes of him an invisible god, but also a medicine man. Id. *Historia*, cap. iv., v., vi., vii., etc., pp. 245, etc. Very positively speaks Durán, *Historia*, etc., vol. ii. cap. lxxix. p. 75: "Tezcatlipoca el qual finjiendo ser baxado del cielo para aquel efecto." Mendieta, *Hist. Ecclesiástica*, lib. ii. cap. x. p. 91: "Y estos sin duda fueron hombres famosos que hicieron algunas hazañas señaladas ó inventaron cosas nuevas en favor y utilidad de la república. . . . Fueron grandes y esforzados capitanes." This he applies to all four divinities mentioned. Torquemada, *Monarchia*, etc., lib. vi. cap. vii. p. 20, etc. The *Anales de Cuauhtitlan*, pp. 17, 18, also intimate that Tezcatlipoca had been a man. In regard to the three others, Huitzilopochtli and Camaxtli are often identified; at all events they are represented as conspicuous tribal leaders. The same is true of Quetzalcohuatl himself.

But I wish to mention here that the two most southerly branches of the Nahuatl, both separated from the main stock by tribes speaking a different language, the Pipiles of Honduras, and the Niquiras of Nicaragua, had no knowledge of any of the four divinities named, except of Quetzalcohuatl, whom the former are said to have worshipped. A. von Frantzius, *San Salvador un Honduras im Jahre 1576*, 1873, pp. 41-44 (German translation of the Report of Diego García de Palacio). It is doubtful if the Nicaragua Indians knew of Quetzalcohuatl.

tzalcohuatl does not form the exception which has been supposed.

It is hardly to be believed that this mythological system (the life-giving pair excepted) was first framed by Indians, who invented the respective personal names, and that afterwards the individuals lived who personify the same gods on earth. Thus the struggle between Tezcatlipoca and Quetzalcohuatl, expressed by their successive assumption of the rôle of sun in a violent manner, was not re-enacted on earth, but, on the contrary, it was the struggle on earth which was symbolized subsequently by what came to pass in the higher world.¹ Accordingly, I believe that the four principal gods were deified men, whose lives and actions became mixed up with the vague ideas of natural forces and phenomena, which form the only basis for Mexican theogony; in other words, that the historical personages preceded, and were the bases of, the mythological ideas.²

Having thus attempted to establish that Quetzalcohuatl was originally an historical personage, there remains to be considered who he was, whence he came, and what actions he actually performed. In regard to his origin we have the following statements:—

1. That he was the son of Camaxtli, tutelar deity of Tlaxcala, who himself appears also to have been a human being.

¹ Compare the tales about this struggle, as told by Sahagun, *Historia*, etc., lib. iii. cap. iv. to vii., and principally by Torquemada, *Monarchia*, etc., lib. iii. cap. vii. pp. 254-256, lib. vi. cap. vii. p. 20, cap. xxiv. pp. 48-50, etc.

² Among the Indians it is a very easy thing to become deified. The development of the Montezuma myth among the Pueblo Indians of New Mexico is an instance of this. This story I have already mentioned in my "Report on the Ruins of the Pueblo of Pecos" (*Papers of the Archaeological Institute of America*, vol. i. pp. 111, 112). Subsequent studies among the Q'ueres Indians, yet unpublished, have fully confirmed the views there expressed. Compare also the story of Hiawatha, or Hä-yo-went'hä, among the Iroquois, L. H. Morgan, *Ancient Society*, p. 127, and their beliefs about George Washington as related by the same author, *League of the Iroquois*, pp. 178, 179.

2. That he was the son of one of the chiefs at the former home of the aborigines, and possibly born outside of Mexico, who emigrated into that country.

3. That he was a Toltec, and as such a native of Mexico.

4. That he preceded the Toltecs, coming into Mexico from some distant land.

5. That he came into the country from parts unknown, while the Toltecs still existed.

6. That he came into Mexico from Yucatan.

If the Ce-acatl of the Codex Zumárraga is the "second Quetzalcohuatl" of later documents, then the tradition that he was a son of Camaxtli gains in prominence, since it is also told by Motolinía, and reappears as a tribal claim or boast on the part of the Tlaxcaltecos. But this latter circumstance impairs the value of the tradition, inasmuch as it possibly may have been derived from Tlaxcala,¹ as appears to have been the case with Motolinía. Still there is a marked difference between Motolinía and Diego Muñoz Camargo, the Tlaxcaltecan interpreter and chronicler. The latter makes Quetzalcohuatl a son of a woman of Teohuiznahuac, and of Mixcohuatl Amacohtle, adding, "For that reason I have stated above that he had come from the North and from Pánuco to Tollantzinco and Tula, where he was regarded as a god."² There is more analogy between Camargo and Torquemada,

¹ There can hardly be any doubt as to the identity of Ceacatl with the second Quetzalcohuatl. The *Anales de Cuauhtitlan*, p. 13, call him "Tlamacazqui ce acatl Quetzalcoatl," and p. 15, "Topiltzin ce acatl Quetzalcoatl." As Motolinía spent most of his early years in Mexico at Huexotzinco, where Camaxtli was worshipped in the same manner as at Tlaxcala itself, it is only natural that he should have collected and repeated the traditions and tales of that tribe in preference to others.

² *Histoire de la République de Tlaxcallan*, p. 145. This is also intimated by the *Anales de Cuauhtitlan*, pp. 14, 15: "12 cañas, 13 pedernales, 1 caña, 2 conejos. En este año llegó Quetzalcoatl á Tulantzinco, y á los cuatro de su permanencia formó casa de quietud y descanso, y habitaciones de tablas de madera. Vino á salir en Cuextlan, pasando el río por medio de balsas."

and I have good reasons for supposing that the latter author has, in many instances, literally copied the former.¹ Even if we add to this the assertion of Motolinía, that Quetzalcohuatl settled also at Tlaxcallan, nothing positive is suggested except the supposition that Tlaxcallan and Cholollan may originally have been peopled by one stock.

That he was the son of one of the chiefs of Chicomoztoc does not necessarily imply that he was born outside of the present territory of Mexico. It is, as yet, impossible to locate Chicomoztoc definitively. While many circumstances point to its having been far to the north, there may be quite as much evidence to the contrary. Thus the Codex Zumárraga mentions that Quetzalcohuatl was brought, as a tribal idol, not from the seven caves, but from Aztlan and Culhuacan, which it places at a still greater distance from Mexico.²

The notion that Quetzalcohuatl was a Toltec is supported by,—

1. The Codex Zumárraga, which calls him a chief of Tula.
2. By Motolinía.
3. By the "Anales de Cuauhtitlan."
4. By the statements of Sahagun.
5. By Camargo in part.

The great difficulty in this case consists in ascertaining

¹ Compare *Hist. de Tlaxcallan*, pp. 135-137, and pp. 141-143, with *Monarchía*, etc., vol. i. pp. 257-260. Camargo was a contemporary of Torquemada's early days. He appears in the royal Cédula confirming the franchises of Tlaxcala from May 20, 1585, as interpreter, *Informacion de Tlaxcala*, p. 102; and again in the *Merced de Cuauhtlantzincó*, June 14, 1587, MSS.

² *Hist. de los Mexicanos por sus Pinturas*, cap. 9-II, pp. 91-93. It refers to some Indian paintings. The *Cuadro histórico-geroglífico de la Peregrinacion de las Tribús Aztecas*, whose original is in the National Museum at Mexico, and which is reproduced in García y Cubas's *Atlas Mexicano*, begins these wanderings with "Coloacan," fol. i. No. 1, and fol. ii. (e. e.). So Sahagun, *Historia General*, etc., lib. x. cap. xxix. pp. 145, 146, also mentions a "Culhoacan" far to the west. It would be impossible to quote here all that has been said and written about the presumable geographical sites of both Culhuacan and Chicomoztoc.

who the Toltecs themselves were. All we can gather about them with safety is, that they were a sedentary Indian stock, which at some remote period of time settled in portions of Central Mexico, as for instance at Tula, Tullantzinco, Teotihuacan, and perhaps Cholula.¹ Nothing certain is known of their language, and it must not be overlooked that the so-called Toltec names mentioned in the chronicles are in the Nahuatl idiom, with a few exceptions, whose etymology and interpretation are yet doubtful. Conspicuous among these are the words *Toltecatl*, *Tula* or *Tollan*, and *Cholula* or *Cholollan*. Nothing positive can be ascertained from older sources in regard to a Toltec language.² The fact that the names of persons and places are generally Nahuatl is not decisive, since the same thing occurs whenever an Indian chronicler belonging to that stock has written about tribes using a different language. I refer to Tezozomoc in regard

¹ All the authors agree in stating that, at some time, Cholula was a Toltec settlement. Camargo alone is not quite clear about it, and Durán, *Historia de las Indias*, etc., vol. ii. cap. lxxix. pp. 73-77, leads to the inference that the Toltecs were only a band of missionaries, disciples of Quetzalcohuatl, whose principal home was Cholula. He has been followed in part by Torquemada, *Monarchia*, etc., lib. iii. cap. vii. p. 255, and by Gregoria García, *Origen de los Indias de el Nuevo Mundo*, 2d edition, 1729, lib. iv. cap. xxiv. p. 262. (This statement, however, is not from the learned father himself, but from his editor, Barcía. Compare the first edition, of 1606.)

² Sahagun, *Historia General*, etc., lib. x. cap. xxix. vol. iii. p. 113: "Estos dichos Tultecas eran ladinos en la lengua mexicana, aunque no la hablaban tan perfectamente como ahora se usa." But on p. 144 he makes the distinction between the "Tultecas, y los Mexicanos ó Nahoas y todos los otros." Ixtlilxochitl, *Quinta Relacion, de Nopaltzin, y el Discurso de su vida y muerte*, p. 345 (Kingsborough, vol. ix.), says the Nahuatl is a mixture of Tulteco with Chichimeco. But Sahagun (see above) affirms that the Toltecs were also Chichimecas! In regard to the latter, I cannot recognize in them a definite tribe, but rather an appellative used by the Nahuatl to designate dexterous and brave warriors and hunters. The confusion about them is such that nothing else can be derived from the statements. The singular fact remains that the word *Toltecatl* has no positive etymology in the Nahuatl idiom, — neither has the word *Tollan*. The latter is also written *Tollan*, and has a suspicious analogy with the *Tuloom*, *Taloom*, of the Maya. I state this as a subject of inquiry in future investigations.

to Michhuacan,¹ and to Ixtlilxochitl in the case of the Otomites.²

Still, the connection of Quetzalcohuatl with the Toltecs is so strongly insisted upon, that it cannot be discarded for the simple reason that we fail to discover exactly who the Toltecs were. Then comes the other statement, by Ixtlilxochitl, that he even preceded the Toltecs themselves, and was a contemporary of tribes called *Olmeca* and *Xicalanca*, — though probably not a native of Mexico.³ Ixtlilxochitl is always a very suspicious authority, not because he is more confused than any other Indian writer, but because he wrote for an interested object, and with the view of sustaining tribal claims in the eyes of the Spanish government. In the case of Quetzalcohuatl, however, his statement is exempt from this reproach, for he had no interest in painting for us a character decorated with the attributes of a Christian missionary, at work among tribes which had no connection with those whose genealogy he subsequently traces. That genealogy begins with the Toltecs, and the latter are not represented as descended from the people whom Quetzalcohuatl is said to have taught. While, therefore, this attempt at Christianizing him appears as a growth of the sixteenth century, among the Indians themselves, this connection of him with a pre-Toltec settlement deserves careful consideration. For the present I can only mention it, reserving it for future investigations.

It is chiefly Torquemada who has propagated the idea that Quetzalcohuatl came into Mexico from some distant land, and consequently as a foreigner, while the Toltecs were still in occupation of the country. I have already stated that Camargo

¹ *Crónica Mexicana*, cap. lxiv. p. 476. The name *Michhuacan* is itself Nahuatl, and not Tarasca.

² *Hist des Chichimèques*, etc., cap. xiv. pp. 92, 93, 99, etc.

³ *Ibid.*, cap. i. pp. 4 to 7, and Kingsborough, vol. ix. pp. 205, 206; also in *Sumaria Relacion de la Historia General*, etc., p. 459, same volume.

may have been one of his authorities; but it is evident that he also drew largely from authors like Tobar and Durán, or at least from material similar to theirs.¹ There is in his story nothing, except the connection with the Toltecs, that can safely be regarded as of historical value, or even as of strictly aboriginal derivation, unless the tale be so construed as to imply that Quetzalcohuatl was a native of a former home of the tribes, lying outside of Mexico. The Yucatecan tradition, as given by Landa, merely refers to a visit of Quetzalcohuatl to that peninsula; for he says that he came from the west, or the direction of Mexico, and that "he returned to Mexico by the same road," or, according to another version, "he ascended to heaven,"² so that his appearance in Mexico cannot have been subsequent to a supposed visit to Yucatan. The Quiché tradition I have quoted for its general resemblance to the theogonies of Nahuatl origin, and not because I regard such similarities as implying any relationship between the two tribes.

So too, we must eliminate the notion of the foreign birth of Quetzalcohuatl, since that would imply that he belonged to another race. This leaves him a prominent gifted Indian leader, who certainly preceded the coming of those Nahuatl tribes that subsequently formed the valley confederacy, as well as that of the later tribe of Tlaxcallan. The claim to his origin accordingly rests between the so-called Toltecs on one side, and the Olmeca and Xicalanca on the other.

Little can be gathered from the tales about the deeds attributed to him that proves of any historical value, except his connection with Tula and Cholula. Even the statement of his long residence at Tollan becomes somewhat liable to suspi-

¹ *Monarchia*, etc., lib. iii. cap. vii. p. 255, to be compared with *Códice Ramirez*, pp. 81, 82, but particularly with *Hist. de las Yndias*, etc., vol. ii. pp. 73 to 77.

² *Relacion des Choses de Yucatan*, p. 298. The Iroquois have a similar tradition concerning Hiawatha. Morgan, *Ancient Society*, p. 127. He ascended to heaven in a white canoe.

cion from the fact that Cholula was called *Tollan Cholollan*, or *Tollam Cholollam*, even after the Conquest.¹ However, I will not dispute about what can be neither proved nor disproved.

If the two places are distinct, as may be inferred, then Quetzalcohuatl appears at the former as a great "medicine-man";² at the latter, more in the light of a "sachem."³ The

¹ Rojas, *Relacion de Cholula*, MS., § 13: "A esta ciudad (á quien dió titulo D. Luis de Velasco, virey que fué desta Nueva España, por su carta misiva) llaman los Indios Tullam Cholullam Tlachiuh altepetl, y tambien pronuncian Tollam Cholollam, que Tullam significa congregacion de oficiales de diferentes oficios, porque dicen que antiguamente en sola esta ciudad se usaba hacer jarros, ollas, escudillas, sogas, zapatos, y otros oficios que les eran necesarios; y de aqui dicen los Indios antiguos que los demas pueblos de la comarca comenzaron á tomar y aprender los oficios: y porque en la lengua mexicana toltecatl quien decir oficial, se llamó Tullam, que como está dicho quiere decir congregacion de muchos oficios. Esto dicen los Indios antiguos y curiosos, aunque no falta quien dice que Tullam significa multitud de gente congregada en uno, á similitud del tule, que es la enca yerba, y no parece ir fuera de camino, porque las armas de esta ciudad son una mata espesa de tule y un cerro con una trompeta encima. Otros dicen que porque habia un prado de tulle junto adonde edificaron el cerro (de que adelante se dirá) cuando poblaron, lo ponen por armas, y tambien dicen los Indios que los fundadores desta ciudad viniéron de un pueblo que se llama Tullam, del cual por ser muy léjos y haber mucho tiempo, no se tiene noticia, y que de camino fundaron á Tullam, 12 leguas de México, y á Tullantzinco, tambien cerca de México, y que viniéron á parar á este pueblo, y tambien lo llamaron Tullam, y esta opinion es la mas vérosimil de todas, por ser cosa usada de todas las naciones poner el nombre de su patria al pueblo que fundan, y especialmente lo hacen los Españoles en las Indias. Llamanla tambien Cholollam, porque la tierra donde esta ciudad está fundada dicen se llamaba así antiguamente cuando ellos viniéron á poblar, y en la lengua mexicana Choloan quiere decir huir, y Choloani huidor; y entiéndese que este nombre les pusieron los comarcanos, como advenedizos y huidores du su tierra. Tlachiuh altepetl quiere decir hecho á mano, como lo es uno que está en esta ciudad, segun se dirá adelante." In addition to the word "Cholollan" or "Cholollam," which is frequently met with in documents of the sixteenth century, the *Anales du Cuauhtitlan*, p. 40, and Manuel de los Santos y Salazar, *Complotto Cronologico de los Indios Mexicanos*, MS., "De los Segundos que viniéron á esta Nueva España," use "Choloyan." At Cholula itself I heard even "Acholoayan."

² Sahagun, *Historia General*, etc., lib. iii. cap. iii. vol. i. p. 243, cap. v. p. 248; lib. x. cap. xxix. vol. iii. p. 112. The *Anales de Cuauhtitlan*, p. 13, call him even a "Tlamacazqui." This word, commonly translated by "priest," is derived from *Tlama*, "médico ó curujano." Molina, *Vocabulario*, ii. fol. 125.

³ Rojas, *Relacion de Cholula*, MS., § 14.

Codex Zumárraga, however, makes of Ce-acatl a great warrior, or war-chief.¹ Neither of the three offices is incompatible with the two others. But we feel warranted in suggesting that his career began in the present State of Hidalgo, and that there he became the leader of a migration. His first stay was at Tula and Tulantzinco, two pueblos lying almost on the same meridian,² and from the outset he moved southward. But there are two versions as to his route. The earliest, that of the Codex Zumárraga, supported by Motolinía and Camargo, makes him travel to Cholula by the way of Tlaxcala,³ and finally settle at the former place. Subsequently he travels thence to Cozcatlan in the southeast corner of the State of Puebla. The later reports, contained in the annals of Cuauhtitlan, and especially in Sahagun, and which are tacitly acknowledged by Durán, represent this journey as a flight by a somewhat different route. The itinerary preserved by Sahagun names the following places, after leaving Tula: Cuauhtitlan, Cuahpa, the Cumbre between the two volcanoes,⁴ and finally Tecamachalco. Thence he moved towards Tlapallan, which place Sahagun locates on the sea-coast. In order to reach Tecamachalco from the Cumbre, he must have passed through Cholula; but the Franciscan chronicler does not mention that name. Both versions therefore in the main agree, and even Ixtlilxochitl concurs in stating, that Quetzalcohuatl's principal stay was at Cholula, whence he went to the eastward; that is, in the direction in which Tecamachalco and Cozcatlan lie from Cholula.

¹ *Hist. de los Mexicanos por sus Pinturas*, cap. viii. p. 91.

² Both places are in the State of Hidalgo.

³ Motolinía, *Libro de Oro*, cap. xxv. p. 130: "Y salió á edificar las provincias de Tlaxcalla, Huexucinco, Cholollan."

⁴ The description is very positive. *Hist. General*, etc., lib. iii. cap. xiv. vol. i. p. 258: "Yéndose de camino Quetzalcoatl, mas adelante al pasar entre las dos Sierras del Volcán y la Sierra nevada."

The Codex Zumárraga, Motolinía, and even Fray Gerónimo de Mendieta,¹ following him, attribute the foundation of Cholula to Quetzalcohuatl. Sahagun, as above stated, does not mention the place, but the southerly migration of the inhabitants of Tulla, to which he so minutely refers, led them, according to his itinerary, directly to the site. The statement that he founded Cholula is also made by Tapia and Rojas. But all these stories are not very clearly told, and the authorities are not always consistent with themselves. If now we consider that Camargo as well as Ixtlilxochitl, two authors who have little if anything in common, both assert that Cholula was peopled when Quetzalcohuatl came, the suggestion that the Olmeca and Xicalanca were its original settlers becomes a subject for future historical investigation. For the present, I can only refer to a few points bearing upon it.

Camargo gives us an itinerary of these two tribes. They descended through the valley of Mexico until they came south of the Popocatepetl at Tochimilco, thence moved up northward, hugging the eastern slopes of both volcanoes, passing Calpan, Huexotzinco, and finally settling on the present territory of Tlaxcala; Santa María Natívitás, a village on the southern slope of the Tlaxcaltecan hills and the northern bank of the Rio Atoyac, being their most southerly settlement.² Thus they went completely around the tribal range of Cholula, as it was in 1519. It is difficult to imagine why they should have taken such a route, leaving the fertile and attractive plain untouched, which was of easier access to them than the region of Tlaxcala, unless we suppose that Cholula was then already occupied.

Motolinía gives another version of the settlements of the

¹ *Historia Ecclesiástica Indiana*, lib. ii. cap. vii. p. 86.

² *Fragmentos de Historia Mexicana*, etc., pp. 13, 14, copied by Torquemada, *Monarchía*, etc., lib. iii. cap. viii. p. 257.

Olmeca and Xicalanca, stating that they occupied the site where the city of Puebla now stands,¹ perhaps intending at the same time to imply that Cholula was included in that establishment. Finally, Ixtlilxochitl makes them land on the Gulf coast, and settle on the banks of the Rio Atoyac, before the arrival of Quetzalcohuatl, and long previous to the coming of the Toltecs, — mentioning Cholula as an Olmec, or Xicalanca pueblo.² It is clear that no certainty can be attained from such reports as these. Possibly the least unsafe surmise may be, that a settlement, perhaps of Olmeca, existed at Cholula when Quetzalcohuatl reached it, who was the leader, or one of the leaders, of an Indian tribe of sedentary character and customs. That tribe or band may have been driven from Tula by intertribal warfare among people of the same linguistic stock,³ before its settlement at Cholula. If there were any inhabitants in that region previously, the mild and peaceable character attributed to Quetzalcohuatl would seem to imply that the two stocks intermingled without previous hostilities. This may have been owing to the circumstance that the numerical power was not on the side of the new-comers. If Cholula was inhabited previous to the coming of Quetzalcohuatl, then the traditions about his life and acts there point to the natural results of the intermingling of a group of village Indians of a higher order settling among a tribe in a lower stage of culture.

The beneficial effects of the coming of Quetzalcohuatl are

¹ *Historia*, etc., Epistola Proemial, p. 7. Also Gómara, *Segunda Parte de la Crónica*, etc., p. 432; but he only mentions "Ulmecatlh," and makes "Xicalancatlh" settle on the coast.

² *Hist. de los Chichimecos* (Kingsborough, vol. ix.), cap. i. pp. 205, 206. *Sumaria Relacion de la Historia General*, etc., p. 459.

³ This is clearly indicated by the *Historia de los Mexicanos por sus Pinturas*, cap. viii. p. 91; by Sahagun, *Historia General*, etc., lib. x. cap. xxix. vol. iii. p. 113. *Anales de Cuauhtitlan*, p. 17. Torquemada, *Monarchia*, etc., lib. iii. cap. vii. pp. 255, 256; lib. vi. cap. vii. p. 20, etc.

stated to have been the introduction, or more likely the improvement, of the arts of pottery, of weaving, of stonework, and of feather-work, the organization of government after a higher type, and the introduction of a mode of worship free from human sacrifice.¹

All this progress would naturally result from the admixture of a higher class of sedentary Indians with those of a lower grade, except only the last-named feature, the abolition of human sacrifice.²

Neither the Codex Zumárraga, nor Motolinía, nor the Cuauhtitlan manuscript (as far as I have it), mentions this humane disposition; Tapia and Sahagun, however, are very positive about it. Nevertheless it is equally certain that, at the time of the Conquest, the idol Quetzalcohuatl was worshipped by the sacrifice of a man, whose flesh was afterwards cooked and eaten!³ Still, this is not absolute proof that the historical personage may not have been himself opposed to such atrocities, and it is not impossible that his more humane views were the cause of the strife which drove him from Tula. Such a strife, it appears, continued to follow him even to Cholula,⁴ for all the authorities are unanimous in assigning to the close of his earthly career another locality, namely, the mythical land of Tlapallan.

¹ Motolinía, *Historia*, etc., Epistola Proemial, p. 10. *Anales de Cuauhtitlan*, pp. 14, 15, 16. Sahagun, *Historia General*, etc., lib. iii. cap. iii. vol. i. pp. 243, 244; lib. x. cap. xxix. vol. iii. pp. 112, 113. Tapia, *Relacion*, etc., p. 574. Rojas, *Relacion*, etc., MS., § 14. Tobar, *Código Ramirez*, pp. 81, 82. Durán, *Historia*, etc., vol. ii. cap. lxxix. pp. 72-77. Mendieta, *Historia Ecclesiástica*, lib. ii. cap. vii. p. 86; cap. x. p. 92; cap. xiv. pp. 97, 98.

² The *Anales de Cuauhtitlan*, p. 26, even say: "Sin embargo de que algunos ancianos aseguran que esta inhumanidad se practicaba ya desde el tiempo del otro Quetzalcoatl, llamadlo Ce-acatl." This looks like attributing to Quetzalcohuatl the introduction of these sacrifices.

³ Tobar, *Código Ramirez*, cap. iv. p. 118. Durán, *Historia de los Yndias*, vol. ii. cap. lxxxiv. p. 121.

⁴ This story is related by Torquemada, *Monarchia*, etc., lib. iii. cap. vii. pp. 255, 256.

I do not feel justified in speculating upon the whereabouts of Tlapallan,¹ and will only say that most of the authorities place it on the sea-coast, and generally on the Gulf of Mexico. But the Zumárraga manuscript and the Cuauhtitlan annals make him die there, and Motolinía himself is silent as to his departure by sea. That story is told in full, first by Sahagun, Durán, and Tobar.

It is very probable that the uncertainty about the close of his life had contributed greatly towards his deification. Of the latter there is no doubt, and it is equally clear that he was worshipped as God of the Air or Wind. Why he should have been chosen for that rôle is a subject open to wide speculations, which are beyond the domain of history. Still, to one who, like myself, has watched for some time the atmospheric phenomena at Cholula, one slight observation may perhaps be permitted.

In the first place, it is not the damaging wind-storm, the tremendous hurricane, which Quetzalcohuatl is made to represent, but the beneficial rain-winds, "which sweep the path for the rain-clouds," upon whose timely descent so much of the future of the horticultural Indian depends. These clouds, as I have already said, arise in a semicircle along the great mountain peaks, from the Malinche to the Popocatepetl, encompassing those portions of the horizon whence, according to either version above related, Quetzalcohuatl descended towards Cholula. May there not, therefore, be some natural connection between the tradition and the physical phenomena related?

The influence which Quetzalcohuatl is represented as hav-

¹ Without attaching any importance to it, I will suggest that Tlapallan might be derived from *Tlapalli*, "color para pintar, ó cosa teñida." Molina, *Vocabulario*, ii. fol. 130. It would then mean the "land of paint." Such a designation might imply vegetable as well as mineral paints, because the Indians used both. But the *Anales de Cuauhtitlan* give other names besides (p. 21).

ing exercised on the tribe of Cholula is such as would naturally spring from Indians of the highest class, both in respect to habits and to social organization. In religion, the worship of his person finally became the leading feature, making him the tutelar deity of Cholula.

Whatever changes the immigration, as whose central figure Quetzalcohuatl stands, may have wrought, these were perhaps not obliterated, though they may have been materially impaired, by subsequent events previous to the Conquest. Of such later changes there are distinct traces.

Camargo asserts that the Cholullans, Huexotzincas, and Tlaxcallans "were all of the same race and of the same family."¹ It is certain that, at the time of the Conquest, they all spoke the Nahuatl language. But the coming of the Nahuatl tribes is generally admitted to have been the last "irruption" of Indians into that part of Mexico comprising the present States of Puebla and Tlaxcala,² and the fact that their language prevailed at the time of the Conquest certainly supports this view, although it does not make it absolutely certain. There exist various versions of this coming of the Nahuatl, but the earliest ones are almost hopelessly confused. Motolinía briefly states that the Tlaxcaltecos came from the northwest.³ Tobar, however, relates that, when they reached

¹ *Hist. de la République de Tlaxcallan*, p. 184.

² The Chichimecas are commonly regarded as having preceded the Nahuatl. But I fail to discover in this word anything more than a general term, a surname or a nickname. While the appellatives Olmecatl, Toltec atl, Otomitl, Nahuatl, define linguistic stocks or specific tribes, Chichimecatl is indiscriminately made to signify a savage, a good hunter, or a brave warrior. I therefore cannot recognize a Chichimecan period in ancient Mexico. The Nahuatl of Tlaxcala themselves are also called Chichimecos, or Teochichimecos. Torquemada, *Monarchia*, etc., lib. i. cap. xiii. p. 36; lib. iii. cap. ix., x., xi., xii., xiii., pp. 258 to 269. Sahagun, *Hist. General*, etc., lib. x. cap. xxix. vol. iii. pp. 115-120, 147, even includes the Toltecs among the Chichimecos. At the time of the Conquest, the Northern tribes, on account of their more roving character, were also called Chichimecos by the Mexicans, irrespective of their language.

³ *Historia*, etc., Epist. Proemial, p. 11.

the lands east of the volcanoes, they found them occupied by giants. These they exterminated, and took possession of the country. Durán is still more detailed. He not only mentions the giants as occupying Tlaxcala and Cholula together with the site of Puebla, but says the Cholutecas exterminated them, and that they were called "Quiname." In another place he intimates that these giants had built the so-called "Pyramid" of Cholula, which Sahagun positively affirms, stating also that the Toltecs were of more than ordinary size. All this tends to show that the Nahuatl, when they immigrated into the present State of Puebla by way of Tlaxcala, overthrew a Toltec tribe then occupying Cholula.¹ In this

¹ Early mention of these giants is found in the *Anales de Cuauhtitlan*, p. 24, where "los bárbaros Tlatlatecollo, de Cuextlampa quizaco," are noticed. Still they are not positively called giants. An earlier notice of them, as yet unprinted, is found in the MS. of Motolinía, *Libro de Oro*, cap. xxviii.: "El segundo sol dicen nahui ocelotl; pereció cayendo el cielo sobre la gente y los mató á todos, y cuentan que en aquella edad y sol segundo fueron los gigantes, y que de aquellos son los grandes huesos que dije que ahora se hallan en las minas y en otras partes debajo de la tierra." This agrees with the *Hist. de los Mexicanos por sus Pinturas*, cap. iii. p. 87, cap. iv. p. 88, in substance, though not precisely,—whereas it is almost literally contained in Gómara, *Seg. Parte de la Crónica*, etc., p. 431. The earliest connection of the tale with Cholula is probably by Fray Pedro de los Rios in 1566, as reported in the *Spiegazione delle Tavole del Codice Mexicano*, Kingsb. vol. v. pp. 165, 166. It is afterwards repeated by Tobar, *Cod. Ramirez*, p. 21; and with fuller details by Durán, *Historia*, etc., vol. i. cap. i. pp. 6, 7; cap. ii. pp. 13-15. Sahagun, *Historia*, etc., lib. x. cap. xxix. vol. iii. pp. 112, 141, is very positive. The tale in the sixteenth century was clearly founded on the existence of fossil remains of large size, and as such is an excellent illustration of the formation of "Historical Traditions and Myths of Observation," as illustrated by Mr. E. B. Tylor in *Researches into the Early History of Mankind*, 1878, cap. xi. pp. 32-34. Bernal Diez, *Historia Verdadera*, etc., 1795, vol. i. p. 350, is very properly quoted by him. But it becomes interesting to study the names by which the Nahuatl called these supposed monsters. The Cuauhtitlan MS. uses "tlatlacatecollo Ixquiname." The first word is easily decomposed into "tlatlaca," men, and "tecolatl," owl, thus indicating the conception of "demon" or "devil," attached by the Nahuatl to the term of "tlacatecolotl," man-owl. The second is derived from "Ixachi," much or numerous, and "Quinametli," giant. Molina, *Vocabulario*, ii. fol. 44, and i. fol. 65. The same author also calls giants "tlacaneyac," great men. I cannot find, in the Nahuatl language, any explanation of

instance the reverse of what had happened at the time of Quetzalcohuatl took place: a more barbarous tribe succeeded to one higher advanced in culture, and the result was a blending of the customs of both, while the tribal worship of Quetzalcohuatl, now formally converted into adoration of the atmospheric elements, remained as before.

This is on the assumption that the Nahuatl incursion was of a warlike nature. But although, for reasons which I shall hereafter state, I incline to this belief, still it is not certain that the change was effected by force. That the worship of Quetzalcohuatl should have survived a military conquest is not very probable. Still, here the peculiar relations come in between Camaxtli and Quetzalcohuatl. The tribal boast of Tlaxcala, that its tutelar deity was father to the tutelar god of Cholula, indicates the former inferiority of the latter; and while that relation was apparently soon changed, as regards intertribal connection, remnants of it may have been left in forms of worship and in mythological tales.

The settlement of Nahuatl Indians on the site of Cholula is the last great change in the history of that tribe previous to the Conquest; but when that event occurred I shall not attempt to determine. It is as yet too early to establish a definite chronology running farther back from the Conquest than two centuries, and even within that period but very few

the word "Quinametli," plural "Quiname." It looks like a foreign term. Rios, *Spiegazione delle Tavole*, p. 165, calls the giants "tzocuilixique," and Ixtlilxochitl, *Hist. des Chichimèques*, etc., p. 3, "Quimametzin Tzocuilhioxime." Tezozomoc, *Crónica*, etc., cap. cviii. p. 692, calls human monsters "Tezocuilxique y por otro nombre Centeyexique." Dr. Valentini has suggested to me the possibility that the word "quiname" may originally have been "Maya," that is, a corruption of "uinac" or "uinic," man, with the Mexican plural "me" attached, thus signifying a corruption of men ("uinac-me" changed into "quina-me"). If this suggestion should be confirmed, it would resolve the tale of the "giants" into a former settlement of Maya Indians at Cholula, the recollection of which was, through a "myth of observation," subsequently transformed into the tradition of a colossal or monstrous people.

dates have been satisfactorily fixed. At present even the historical movements of Cholula, beginning from its removal up to the time of Cortés, a record of some tribal feuds, Cholula fighting against Tlaxcala and Huasteco, and its alliance with one of these against the other. Towards the latter half of the fifteenth century, the Mixtecs and Tlaxtecs were expelled from the valley of Atlixco, threatening both Cholula and Huasteco; afterwards Cholula appears to ally itself with Tlaxcala against the valley confederacy, and finally in armed array against the Tlaxaltecos and inclining towards the tribes of the Mexican valley. Thus Cortés found them in 1519.¹

To ascribe to Quetzalcóhuatl the introduction of forms of worship at Cholula may therefore be very proper, but it is doubtful whether, under the influence of subsequent immigration, these forms remained unaltered. If it is true that the worship of his tribe excluded human sacrifice, then a great change took place during the Nahuatl period. A cursory notice of the form under which the Cholultecos represented Quetzalcóhuatl at the time of the Conquest, and the manner in which they adored him, may not be out of place here.

Sahagún simply states that this idol was always lying on the ground, covered with robes; that the face was ugly, the head long and bearded.² Torber and Durán give more details, and the latter says: "This idol was of wood, and had the appearance which the painting presents; that is to say, it had the countenance of a man and the legs of a bird with a tail

¹ For a very condensed, though detailed, description of these feuds, I refer to *Anales de Cuauhtlilan*, and to Camargo, *Fragmentos*, etc., pp. 42-91, etc. Some details are given in Durán, *Historia*, etc., vol. I. cap. viii., ix., x., etc.; in Texamont, *Crónica*, etc., cap. xxi., xxix., etc.; and Diego Pantoja y Abendaño, *Theatro de Nueva España*, etc., M.S., vol. II. fol. 27. 43, 136.

² *Historia General*, etc., lib. III. cap. III. p. 243. Rojas, *Relacion de Cholula*, M.S., confirms, or perhaps copies, this statement. The writings of Father Belandier were known to Spanish officials in 1561, although not published. He died on the 9th of February, 1595, and the manuscript of his *Historia* was completed prior to 1570.

bill, on which grew a crest with warts like a Peruvian duck. The bill also had a row of teeth, and the tongue hanging out. From this beak to the middle of the face there was yellow paint, and, besides, a black band from the eyes down around the bill."¹

The festival of Quetzalcohuatl is stated by Durán to have taken place on the 3d of February. Forty days previously a slave was selected, who must be in perfect health and of faultless body. He was dressed in the same manner as the idol, and after having been carefully bathed, and kept in "honorable confinement" as an object of worship for that length of time, he was sacrificed at midnight. The heart was tendered to the moon, and afterwards thrown at the idol, and the body cut up, cooked, and publicly devoured. This was the manner in which the festival was celebrated at Mexico, where Quetzalcohuatl was much less worshipped than at Cholula; still, Tobar leads us to infer that at Cholula a similar sacrifice was performed.²

Motolinía mentions a great festival which took place at Cholula every fourth year, preceded by long fasts and tortures self-inflicted upon various parts of the body, sufficient to draw blood. The same author speaks of reciprocal relations between Cholula and Tlaxcala on the occasion of the festivals of Camaxtli and of Quetzalcohuatl.³

It is noteworthy that some of the older writers attribute to Quetzalcohuatl the invention of those self-tortures which, at the time of the Conquest, were so common among the Nahuatl Indians of Mexico.⁴ The custom, however, of fasting and subjecting one's self to pain is and was in general

¹ *Historia de las Yndias*, etc., vol. ii. cap. lxxxiv. p. 119. Lám. 6, Trat. 2º.

² *Códice Rumírez*, Trat. ii. cap. iv. pp. 147, 148. *Historia de las Yndias de Nueva España*, etc., vol. ii. cap. lxxxiv. pp. 119-121.

³ *Historia*, etc., Trat. i. cap. xi. pp. 60-62. *Libro de Oro*, cap. xxvii. p. 97.

⁴ Sahagun, *Hist. General*, etc., lib. iii. cap. iii. vol. i. p. 244; lib. x. cap. xxix. vol. iii. p. 112. Ixtlilxochitl, *Hist. de los Chichimecos*, pp. 205, 206, etc.

use among Indians as a preparation for the office of "medicine-man,"¹ which could only be obtained by severe trials of that sort. The appellation of "priest" was bestowed upon him by the older writers, and has prevailed ever since. His main duty, besides, consisted in offering himself up in behalf of the tribe. The assertion, therefore, that Quetzalcohuatl invented such a practice, while it cannot be totally disproved, still appears of doubtful probability.

About the organization of a so-called priesthood at Cholula by Quetzalcohuatl, it is equally impossible to form any conclusion.² Gabriel de Rojas has the most details on the subject of that organization, and I can do no better than to translate his statements here without vouching for their entire correctness:³—

"The Indians of this city were free, acknowledging obedience to no external authority or cacique. They governed themselves by two principal men, called Aquiach and Tlalchiach. The coat of arms of Aquiach was an eagle, and that of Tlalchiach a tiger, which is the fiercest animal of this land; signifying thereby, that, as the eagle is over the birds, and the tiger over the beasts, so were the two mentioned above all the others. These two Indians were in the chief temple of the city, called Quetzalcoatl (where the convent now is). This temple was founded in honor of a captain who led the people of this city to settle here in ancient times, from very remote parts in the west, of which nothing certain is known, and that

¹ Tlamacazqui, from Tlama, physician or doctor.

² I am unable to find any direct proof of the fact believed by many, that one of the medicine-men bore the title of Quetzalcohuatl. There are indications of it, however, and it is not at all impossible. Something similar took place among the Iroquois. The second and third sachemships of the Mohawks, Hä-yo-went'-hä (Hiawatha) and Da-gä-no-we'-dä, were filled but once, and by the mythical personages so named. But the titles remained always afterwards. Morgan, *Ancient Society*, p. 131. Also the title of "Atotarho," of the Onondagas. Parkman, *The Jesuits in North America*, Introduction, pp. liv. and lv.

³ *Relacion de Cholula*, MS., § 14.

captain was called Quetzalcoatl, and when he died they built a temple to him. In that temple there were, besides the said two Indians, a great number of religious men, who had to be chosen from the nobles of one single quarter of this city, which was called Tianquiznahuac, and to-day is named S. Miguel.¹ Whenever these took the vows of religion, they offered up all or most of their property to the temple for the maintenance of its inmates; and having once entered the order, it was not allowed to them to go out of it any more. If they were married, they might go home at nightfall to sleep with their wives, but whenever at midnight a trumpet, made of a long calabash, was blown, they gathered at the temple, where they remained in prayer a certain time, casting incense before the image of Quetzalcoatl. That image was within the temple, of full size, and with a long beard. They prayed to it to give them good rains, health, and peace in their commonwealth. The remainder of the time they passed in the temple, whither they carried food from their houses, and every twenty days they all came together in the temple and ate in common. To those who newly entered the order was given a black cape, which they wore four years; after that time another cape of black and red colors; this they wore four years more, at the close of which they received a black cape with red border for four years; then again a black and red cape; and when these three² courses of four years each were past, they received black capes again, which they wore for the rest of their days, except the oldest of the order, whose dresses were red. So it happened that, when the two Indians mentioned as Aquiach and Tlalquiach died, these were the persons who had to succeed in the chief priesthood, the two oldest ones taking office, and receiving the names, coats of

¹ This is the San Miguel Ticpan of the old map.

² This should be four, but the text reads, "y acabados estos tres cursos de á cada cuatro años."

arms, and insignia of AQUIACH and TlalQUIACH, the eagle and the tiger. Thus the oldest ones continually succeeded in the supreme office, and two of them governed the whole republic, and from this order the captains were chosen by AQUIACH and TlalQUIACH whenever any war with their neighbors began."

Rojas then states how the chiefs of neighboring pueblos went to Cholula to pay tribute and homage to Quetzalcohuatl after being placed in office, and received from the two high-priests the investiture. I have already alluded to the improbability of this statement. He afterwards proceeds as follows:—

"Alongside of the said temple there was a great block of houses (*una gran cuadra*), in which resided ordinarily twenty-six of the leading Indians of the tribe, who accompanied the two high-priests whenever these went out anywhere. In the same block there were stationed a large number of trumpeters and drummers, whose office it was to go before the high-priests, when they went out, playing their instruments. Besides, the trumpeters had to blow their trumpets at sunset, so that all might say their prayers, and again at midnight. Then those of the temple rose to pray, as it has been told, and to burn incense to the idol, after having first bathed, and when at midnight the trumpets sounded, all those of the people who heard the sound rose in their houses, bathed, and remained awhile in prayers. Afterwards, at daybreak, they gave another blast for the same purpose, and the people of the pueblo commonly gathered in the temple in the morning to pray and make their offerings, which consisted of fowl, quails, rabbits, deer, copal-incense, and other things. . . .

"On the summit of a hill which is in this city, there was, in a hermitage there constructed, an idol called Chiconauh Quiahuitl, that is to say, *he who rains nine times*, because they called the rain *quiahuatl*, and the number nine *chiconahue*.

To this they prayed whenever they lacked water, and sacrificed to it children from six to ten years of age, whom they captured or bought for that purpose. When they sacrificed, they carried the children up the hill in procession, whither went some old men singing, and before the idol they cut the child open with a knife, taking out the heart, and they burnt incense to the idol, and afterwards buried the baby (*la criatúra*) there before the idol. This they always did when there was scarcity of water for their crops. Besides, they held a special festival for it every year, at which all the pueblo were present.

"In addition to these idols, which were the principal ones of the city, it contained well-nigh eight hundred minor idols in little churches or hermitages in all the quarters, in which they also performed their rites and ceremonies, adorations and sacrifices of such men as fell to the share of each quarter in war. These idols also had little hillocks made by hand, like the one mentioned, with its hermitage upon it, called Teucalc, or house of god. Of these hillocks there remain two at this day, which are close by the great hill. These may be forty ells in height, and are made of adobe bricks, and even to-day there are all over the city relics of many other smaller, which, together with the houses, have gone to decay."

I have already alluded to the probability that the two high-priests may have been in fact only leading chiefs, similar to the dual executive found in other tribes. The ritual and the organization of the so-called priesthood are simply analogous to what existed among the Nahuatl tribes at the time of the Conquest,¹ and also resemble what is told by Burgoa about the customs and practices of worship at the former Tzapoteco settlement of Lyo-Baa, where now stands the village of San

¹ Compare Sahagun, *Hist. General*, etc., lib. ii. Apéndice, vol. i. pp. 217, 229; lib. iii. Apéndice, cap. ix. ib. p. 276; lib. viii. cap. xxvii. vol. ii. p. 316; and others.

Pablo Mitla, in the State of Oaxaca.¹ There are, of course, tribal, and therefore local variations, but at the same time such conspicuous resemblances that I cannot safely conclude whether any, or what, part may be due to the original influence of the immigration which Quetzalcohuatl has been made to typify.

There still remains to be considered how, and in what manner, he may have come to be regarded as "god of the traders." In another place I have attempted to show the true part which the inhabitants of Cholula played in the life of Indian tribes in Mexico.² Cholula was, by its geographical position, its natural products, and the industry of its people, a great Indian market.³

In the first place, it was of easier access from the south than any other pueblo of Central Mexico, and consequently the tribes of the valley, in their trading expeditions, found there a resting-place, when on their journeys towards Oaxaca. But at the same time, at the Cholula fairs, they met with the produce of the far south, which had been carried along the line of tribes extending from Tehuantepec up through the valley of Oaxaca to Cuicatlan, Cozcatlan, Tehuacan, Tepexe, Tepeaca, to within convenient distance of Cholula. All these pueblos lay within easy reach of each other, and it was not necessary for the Indian traders from the south to go any farther than Cholula in order to meet the products of the valley tribes. The exchange might very well take place there.

¹ Fray Francisco de Burgoa, *Geografica Descripcion de la Parte septentrional del Polo Arctico de la America, y Nueva Iglesia de las Indias Occidentales, y Sitio Astronómico de esta Provincia de Predicadores de Antequera Valle de Oaxaca*, etc., Mexico, 1674, Parte ii. cap. xxiii. fol. 129; id. vol. ii. fol. 258-261, cap. liii. I shall have occasion to refer again to this very rare and considerably over-estimated work.

² *Social Organization and Mode of Government*, etc., pp. 602-606.

³ Ixtlilxochitl, *Quinta Relacion*, etc., p. 332, even speaks of Cholula as one of the chief markets of the Toltecs. That its fairs were much frequented at the time of the Conquest is well known.

The tribe possessed two great staples,—cochineal and maize, of which the latter was of much less importance. Cochineal, or *nocheztli* (blood of the prickly pear), was raised on the *Opuntia* in large quantities. As late as 1581, the city of Cholula alone produced annually from 2,000 to 4,000 arrobas (50,000 to 100,000 pounds).¹ The subsequent introduction of European cereals completely put an end to its culture there, although the Spanish government encouraged it in other parts of Mexico. But before the Conquest the dye was a valuable object of exchange, much sought after, and it formed an attraction to traders of distant tribes. It is known that, under the system of desultory warfare common to the aborigines of Mexico, commercial intercourse was seldom interrupted, even at the time of hostilities.

Of industrial products, it was principally the pottery which drew strangers to the *Tianquiz* of Cholula. There can be bought now in Cholula large numbers of heads made of clay; human heads and skulls, heads of lizards, and possibly of monkeys. They all go by the name of idols, although the children call them “little faces” (*caritas*). I am satisfied that they were merely intended for ornaments to jars and pots, shaped in little moulds and fastened upon the unbaked vessels, commonly one on each of four sides. In some cases an entire human body formed one face of the jar. Plastic art in general at Cholula labored under the same defects which are manifest in the collections at the National Museum of Mexico. The form is fairly good whenever it is very simple. Thus human faces are sometimes excellent, and I have secured one piece, imitating the female head-dress previously mentioned, which is quite perfect. But as soon as an attempt is made to carve the whole body, then a disproportion between its various parts results, which is most disagreeable to the eye. The same is true of stone figures also. The latter are scarce

¹ Rojas, *Relacion de Cholula*, § 23.

at Cholula at present, and are all made out of tetzontli, the black lava used for the manufacture of grinding slabs.

Green stones, carved into various shapes, have been associated with Quetzalcohuatl,¹ and inferentially with Cholula. They are quite frequent, or were so a short time ago, among the finds in the neighborhood of the present city. I have seen collars, perforated disks, and entire frogs. The workmanship has nothing to distinguish it from that of other specimens of plastic art. But it is to be remembered, that I have been unable to find this material *in situ* anywhere within the district; that the Indians always positively assured me that its locality was unknown; and finally, that most of the natives are of the opinion that these stones are artificial compounds. They are called "chalchihuites," but it can easily be seen that this name is applied to the color alone, irrespective of their chemical composition.² I have scarcely any doubt that this material was imported into Cholula from regions now unknown, thus affording additional evidence of traffic at the aboriginal pueblo.

The same can be said of obsidian. It was called by various names, Itztli, Melitztetl, Pelitztetl, and the nearest place where it occurs lies far outside of the present district. Still, the demand for it must have been great, judging by the quantity of flakes, cores, knives, arrowheads, etc., etc., still to be found scattered over the surface. It was an object of such moment in daily life as to indicate a steady intercourse with the North, where the nearest obsidian rocks protrude.³

¹ Sahagun, *Hist. General*, etc., lib. iii. cap. iii. p. 243. *Anales de Cuauhtitlan*, p. 16, and others.

² At Calpan I was shown chalchihuite of various kinds. One was plainly serpentine, another was as plainly green obsidian, and a third apparently chlorite slate. It is the color which gave the name. Therefore it ought to be written as it is pronounced, — "chal" or "xal," "xihuitl," the *x* sounding like *sh* in English.

³ Near Tullantzinco, on the western slope of the coast Cordillera, although I incline to the belief that it may be found even nearer.

Of gold, silver, and copper there are a few traces in the southwestern and southern parts of the old tribal range, but there is no certainty that veins of these metals were ever worked there. That objects of art made from such material should be scarce now is only natural, and no evidence of their former rarity. Still, the metal could have reached Cholula only by trade and barter. Such metallic objects as I have seen were fairly well made by beating or hammering, but without any evidence of casting. Of their antiquity,¹ however, I do not feel quite sure.

Featherwork and rabbit-hair were used to decorate cotton textures. Of the former there is still a magnificent specimen at the church of Calpan, which, however, postdates the Conquest;² and of the latter I have seen a fine robe from Tlaxcala, also of later date, but with patterns evidently antique.³ Some species of the birds of Cholula have bright hues, but the most brilliant of all, the humming-birds, are not more common there than in northern latitudes. The gaudy plumage of the parrot and macaw, the splendid feathers of the trogon or quetzaltototle, had to be brought from the far South, thus forming another object of commerce on the Tianquiz of Cholula.

I confess my inability to decide the question whether cotton was raised at Cholula at the time of the Conquest, or not. The older authors are silent on this point, and I incline to the belief that, if cultivated at all, it was not extensively. The fact that I saw an ancient hand-loom at Cuauhtlantzinco, is far from conclusive. But as the people dressed in cotton, at least to some extent,⁴ I infer that cotton also formed an article of importation.

¹ Such are ear-rings of gold, now in the National Museum of Mexico.

² The picture of St. Andrew, commonly called "El San Andrés de pluma."

³ It was offered to me, but I refused to buy it. It contains silk thread, and, although made after antique patterns, is still evidently later than the Conquest.

⁴ Rojas, *Relacion de Cholula*, § 30, "Mantas de algodón para su vestir, no se hacen aquí; pero traenlas á vender al tianquez de diversas partes donde se

Last, but certainly not least, as an object of barter, is the cacao. It is needless to state that this was not, and is not now, a product of the high plateau. Rojas, in 1581, writes about it as follows: "The greatest commerce done in this pueblo is in cochineal and in cacao. . . . This cacao they grind and dissolve in water, beating it with the hand, so that it raises much froth."¹ At present, it is no longer beaten, but a wooden pestle is twirled about in the liquid between the palms of both hands. That cacao served for exchange, or rather as a rude substitute for money, is well known, which evidently increased the demand for it. Rojas says that, at his time, there were Indians so dexterous in handling cacao as to count 200,000 grains in one day.

The variety of products which accumulated at Cholula in this manner made of its inhabitants a tribe of traders, as the Tlaxcaltecos justly remarked to Cortés. It is not strange, therefore, that the tutelar deity of Cholula, Quetzalcohuatl, became in the eyes of foreign tribes the god of the traders. Those who frequented the Cholula market placed themselves under his protection, and sought to secure his good will and assistance by offerings at his shrine, which accounts for the idea that Cholula was a place of pilgrimage for all the Indians of Mexico. It is very natural that the Cholultecos may have made some such boast of an imaginary superiority of their god to all the other deities of the land.

Before casting a glance at the arts of life and husbandry practised at Cholula at the time of its Spanish conquest, I must call attention to the other statement of Rojas touching worship; namely, that besides Quetzalcohuatl, and next to him in authority and importance, that tribe worshipped an idol called Chiconauh Quiahuitl, or Nine Rains.

labran, y especialmente se gastan las de Campeche, que son las comunes, aunque se gastan tilmas y huipiles pulidos y curiosos para su vestir."

¹ *Relacion*, etc., § 33.

That such an idol was really worshipped on the top of the so-called Pyramid of Cholula, so far as I know, is only stated by this author ; but it is singular that, among the Indians of to-day, the great mound is called Chicontepetl, Nine Hills. I would here remark, that the number nine associated with an object frequently denoted among the Nahuatl merely something supernatural, without regard to definite quantity.¹ Therefore, while I incline to the belief that the word is directly connected with the nine months of the year from the beginning of March to the beginning of December, — during which more or less rain falls at Cholula, — still it might simply indicate the origin of rain as from the heavens, without any allusion to the specific period or season. But it is worth noting, that the idol at Cholula next in importance to Quetzalcohuatl, the rain-bringing Winds, is Rain itself, and the idea of an original connection between the two cults becomes quite probable. This is further strengthened by the statement of Sahagun, according to which Chiconquiritl was brother of the god of the merchants.² I shall have to return to this point again, when I treat of the great mound, or so-called Pyramid of Cholula.

The position of Cholula, as an extremely convenient, and therefore much frequented market, explains another statement, that Quetzalcohuatl possessed unusual treasures, according to the Indian conception ; such as birds of precious plumage, which that part of Mexico does not possess, “chalchihuitl,”

¹ I refer to the “nine heavens” of the *Historia de los Mexicanos por sus Pinturas*, p. 102, of the *Anales de Cuauhtitlan*, p. 15. To the terms used by Tezozomoc, *Crónica*, etc., cap. lv. p. 436: “Yu atlecalocon Chicnauhmicltan, en el noveno infierno del abismo”; also cap. lx. p. 454. To the idol Chicunahuitzcuintli, “nine dogs,” Torquemada, *Monarchia*, etc., lib. vi. cap. xxx. p. 60. To the river Chicunahuapan in the infernal regions, Id., lib. xiii. cap. xlvii. p. 527. Finally, to the idol Chicunauh Hecat, “nine winds” (Chiconauh Ehecatl) of the Nahuatl of Nicaragua, already mentioned.

² *Hist. General*, etc., lib. i. cap. xix. p. 32.

and gold and silver. Some writers have attributed to him the invention of the art of manufacturing these materials. It is more than doubtful whether this is true in regard to metals¹ and stones; while as to feather-work, not only was it in use during ancient times among tribes where Quetzalcohuatl was hardly supposed to be known, but at Cholula feathers and also rabbit-hair were worked into cotton cloth, or rather mantles. Rojas positively asserts that the latter were not made at Cholula. His picture of the aboriginal dress at the time of the Conquest is very clear and positive: "Their dress in times of peace consisted of a tilmatl or white cotton mantle, square, with the two ends tied together on the right shoulder; of a narrow breechclout, and of shoes like sandals, similar to those which the ancients used to wear. . . . The women used to wear a many-colored cotton skirt, coming down to the ankle or a little above, with plaits and folds and paintings, called *nahuas*. Over the *naguas* was worn a *guipilli*, like a cloak or breast-cloth without sleeves, the border stitched with cotton, and with tufts of rabbit-hair and feathers of ducks for ornament. In front and behind, these *guipilles* show a square portion, on which many figures of animals, birds, and fishes are executed with gold and in colors." Cotton also entered, like feather-work, largely into their military dress and ornaments. Says the same authority: "They fought with bows and arrows, and with a weapon made out of a handle, in which was inserted many pieces of flint as sharp as knives. This they called *itzquanitl*, or *wood of knives*, because they call a knife *istli*, and wood *quanitl*. In war they wore, as protection against arrows, skirts (*ju-*

¹ Torquemada, *Monarchia*, etc., lib. iii. cap. xix. p. 282, positively denies that the people of Cholula worked these metals: "Y no á ser Plateras, y Entalladoras, como Francisco Lopez de Gomara dice, aunque es verdad, que muchas usan el trato de la Mercancia, y andan de Mercado, en Mercado." Neither does Rojas mention it.

bones) stuffed with cotton, like armor, and shields of canes decorated with feathers; also, much feather-work was worn for ornaments, and these shields and feathers they use to-day in their dances, called *mitoti*.”¹ If cotton was not extensively cultivated about Cholula, of which there is no proof,² it must be doubtful whether Quetzalchuatl could have had anything to do with inventing arts for which the materials were not at his command.

Aboriginal horticulture at the time of the Conquest was limited to but few objects, of which I have already mentioned cochineal, maize, and cotton. Beans, calabashes, and pepper were the other cultivated plants, with the addition of the all-important maguey. I have been able to learn nothing of value as to the modes of cultivation and the implements used. In regard to irrigation, one curious fact is, that the Cholultecos were dependent for it upon their neighbors of Huexotzinco, since all the drainage of the Yzta-cihuatl had to pass through the latter's territory, (which included Calpan,) before it reached the Range of Cholula. The use of this water was a fruitful source of dissensions, and hence arose the almost continuous quarrel between the two tribes.³

¹ *Relacion*, etc., § 15. This style of dress had already begun to be changed in his time. But we readily recognize the same general features which composed the aboriginal dress at the time of the Conquest, and among the weapons the “*macuauitl*,” or wooden sword, the “*ichcahuipilli*,” or stuffed cotton skirt and jacket, and the “*chimalli*,” or shield. D. Juan N. Mendez, Governor of the State of Puebla, informed me that he had found the “*macuauitl*” in graves many years ago. At present, there are none to be seen.

² Torquemada, *Monarchia*, etc., lib. iii. cap. xix. p. 282, says: “La gente pobre vestía de nequen, que es la Tela gruesa, y basta, que se hace del Maguei, y los Ricos, vestían de Algodon, con orlas labradas de Pluma, y Pelo de Conejos, aunque aora todos visten bien.” Compare Tapia, *Relacion*, etc., p. 573. Bernal Diez, *Hist. Verdadera*, etc., cap. lxxxii. p. 73. Cortés, *Carta Segunda*, p. 21.

³ It continued the same after the Conquest. The archives of Cholula contain many documents relative to this continuous strife, down to the present century. The drinking-water for Cholula now descends from the haciendas of

The maguey was, and still is, of great value to the Indian of that region. In aboriginal times it was used not only to manufacture a beverage from, and for firewood, but its spines and thorns served as needles and awls, and the fibre, "pata," was used, as it now is, for thread, and for ropes. It was also medicinal, the charred spines being used as a cure for open wounds.¹ The beverage, however, which the Indians made from the maguey was different from the *pulque* of to-day. The latter is fermented, the former was boiled. Fray Toribio Motolinía described the process of boiling as follows: "This liquid, when it is gathered, is like honey, and when it is cooked and boiled on the fire it makes a clear sweetish wine, which the Spaniards drink, and declare to be very substantial and wholesome. When some roots are thrown in during the cooking, which the Indians call *ocpateli*, a word which signifies sauce or medicine of wine, it becomes so strong as to inebriate those who take it in quantities. During heathenish times the Indians used it to make themselves drunk, and more cruel and beastly."² Rojas, who wrote about thirty years later, does not mention the boiling process; but Oviedo,³ who was a contemporary of Motolinía, and also Hernandez,⁴

Chahuac and Buenavista. Both lie on the slopes of the Yztac-cihuatl, in the district of Huexotzinco.

¹ Rojas, *Relacion*, etc., § 26. But the juice of the maguey was also used to dissolve medicines. Motolinía, *Historia*, etc., Trat. iii. cap. xix. pp. 244, 245: "Todas las medicinas que se han de beber se dan á los enfermos con este vino; puesto en su taza ó copa echan sobre él la medicina que aplican para la cura y salud del enfermo." Sahagun, *Hist. General*, etc., lib. xi. cap. vii. p. 276.

² *Historia*, etc., Trat. iii. cap. xix. p. 244. It is singular that the *Conquistador anónimo*, xi. p. 382, does not mention the boiling process at all. "Et in certo tempo dell' anno che é maturo et ha la sua stagione, con una trivella forano questo albero da basso donde stilla un' humore che lo mettono in conserva in certe scorze d' alberi che hanno; et di lí a un dí, ó duoi lo beono cosi smisuratamente che fiu che cadano in terra ibriachi senza sentimento non lassano di bere." This would indicate fermentation also.

³ *Hist. General y Natural*, etc., lib. xi. cap. xi. pp. 384, 385.

⁴ Joannes Eusebius Nieremberg, *Historia Naturæ maxime Peregrinæ*, 1635, lib. xiv. cap. xi. p. 300. Nieremberg copied Hernandez.

know of no other mode of preparing the juice of the maguey as a beverage. It seems, therefore, that the aborigines, previous to the Conquest, produced their maguey wine in a manner somewhat different from the *pulque* of to-day, and similar to the process still in use among the Comanches.¹

That the fields were small, on which these and the other crops grew, can be seen to-day. Even now, when the Indian is acquainted with the use of domestic animals, he practises horticulture rather than agriculture.² That the area cultivated was much smaller then than now, is proved also by the abundance of game then, which now has almost entirely disappeared.

Their mode of tenure of lands did not differ from that which I have described as in existence among the ancient Mexicans.³ It was communal, and remained so until lately. The plots were held in possession, and not by absolute ownership. For governmental purposes a special tract was set off, and this custom lasted at Cholula perhaps longer than in many other parts of Mexico, as the "tecpan-tlalli," as well as the "tlatoca-tlalli," at an early date were converted by the Spaniards into private estates for the Indian chiefs under the erroneous impression that these chiefs had owned them previous to the Conquest. The "tlatoca-tlalli" of Cholula certainly remained unimpaired as late as 1555,⁴ while eleven

¹ Bancroft, *Native Races*, vol. i. p. 517.

² The turkey was domesticated before the Conquest. Now the Indian has other domestic animals, but he generally takes very poor care of the larger kind.

³ Compare *On the Tenure and Distribution of Lands, and the Customs with Respect to Inheritance, among the Ancient Mexicans*. I have nothing to add to the contents of that essay except the fact, that possibly the members of the same calpulli may have been allowed to sell their lots, "tlalmilli," to others, provided these were of the same cluster. I am not quite sure of this, however.

⁴ *Testamento de Capixlahuatzin*, MS.: "Y para que sirban en nuestra tierra de cacicazgo que nos endonó el Senor Viso-Rey Don Luis de Velasco, en nombre de nuestro gran Rey, el que se haya en España . . . á vos otros nuestros hijos y nietos, que estan en nuestra tierra antigua, que nos fuéron endonado." This

years later the same tracts of the pueblo of Calpan appear as private property of a cacique.¹ The mode of inheritance also seems to have been the same as in Mexico, the male descendants alone having a share in the cultivable lots;² but during the time of Spanish domination this was changed, so as to gradually introduce an equal distribution among all the children.

Marriage and burial customs are best described by simply translating the passages in which Rojas alludes to them: "When they married they did not go to church, but the pair, being together in the house of the parents, were covered both with one mantle or tilmatl, and a chip of pitchy pine wood was fastened in front of them, called in their language *ocotl*, and when this chip had burnt down, the marriage was considered as concluded; but it could be dissolved on any trifling grounds, and they might remarry with whom they liked. They had but one legitimate wife, but many concu-

alludes evidently to the "tecpan-tlalli," converted into private tracts by the Spanish donations. The following words, however, apply to the "tlatocatlalli": "á de acabar de hacer la Yglesia de San Pedro y San Pablo Tlaquiltenanco en la tierra del Señorío."

¹ *Junta de San Nicolás*, MS. The "tierras de los caciques" were designated by groups of palm trees at their corners, and I have seen three such groups. One, a very large one, is on the western slope of the Teoton, another on the east side of the old monastery of Calpan, and a third between San Gregorio Atzompan and Papaxtla. It is presumable that these palms were not planted, but simply left standing. I must here recall another fact. The *Anales de Cuauhtitlan*, p. 22, call the morning star "Tlahuiz Calpan Teuctli," and this is translated by "Chief who sheds light on the Houses." This same expression I found in a deed of real estate, written in Nahuatl, of 1730, applied to D. Leonardo de Mendoza. In general, it was only in the latter half of the past century that the Spanish government made a decided effort to oust the Nahuatl idiom from common use in writing. I have seen deeds in Nahuatl dated 1787. According to the *Libro Primero de Cordilleras*, of Calpan, MS., fol. 47, 48, 49, the Bishop of Puebla, D. Francisco Fabian y Fuero, issued a circular dated 19 September, 1769, enjoining strict use of the Spanish language by the aborigines. This was in consequence of a mandate from the Viceroy, Marquis de Croix, dated 7 September, 1769, fol. 49.

² Rojas, *Relacion*, etc., MS.

bines beside.”¹ This agrees perfectly with the general custom reported of the Nahuatl tribes before the Conquest, and suggests also a few of the ceremonies still observed among the natives of to-day.²

Rojas is brief in regard to burials: “When they died they were buried before some idol, in a round hole, not extended at full length, but leaning or squatting.”³ I made diligent inquiry for graves, but never saw any. A great number of descriptions, however, were furnished to me by those who had found them within the city of Cholula as well as outside, as far west as the Hacienda de San Benito, on the former confines of Calpan, and as far north as near the great bend of the Rio Atoyac. The statements vary greatly, and indicate either superficial observation or different modes of burial — probably both.

On the plan of part of the city of Cholula, (Plate XIII. Fig. 10,) I have designated the places where I became satisfied that human bones, skulls, and other indications of burial, had been exhumed. These are not all, but they are the only ones which I could locate definitively.

1. On the summit of the so-called Pyramid were found a few human bones, together with an urn or jar, two conch-shells, and a piece of quartz containing iron pyrites. This recalls the sacrifices of children to the idol of Rain mentioned by Rojas, in which the bodies were buried in front of the idol. No other details could be ascertained, except that the objects were all close together, as if in one heap.

2. A human skeleton was disinterred, extended at full length, with head to the west. On the skull was a small bowl

¹ *Relacion*, etc., MS. The girls brought no dowry.

² I was told that in some cases the principal men were sent to make request for the girl. I need not refer to older authors for descriptions of marriage customs, as they are well known.

³ *Relacion*, etc., § 14.

of clay painted red, which contained coins. The remains were dug up in the street at a slight depth, and the coins clearly indicate that the burial postdated the Conquest.

3. Another instance occurred in the adobe of the north side of the artificial Cerro de Acozac, but no details were secured.

4. At the base of the pyramid, northwest corner, but within the area over which the adobe of the mound formerly extended,¹ was a round grave or cyst, incased by stones. The body was in a sitting posture, facing the east. Along with it, a very few vases, stone figures, and trinkets were found. Among these trinkets was a circular perforated tablet, composed of trapezoidal plates of green stones (*chalchihuites*, but of various materials). It lay on the breast of the skeleton. The whole was covered with a little knoll of earth.

5. Human bones were exhumed near the cross erected on the southwestern platform of the great mound. No reliable details, however, were obtained, and possibly the burial is recent.

6 and 7. Railroad excavations at the foot of the mound, and also near the Cerro de la Cruz, brought to light four skulls. Of these, one was complete, with the lower jaw, and large. It showed a most remarkable artificial deformity. The rear part of the head was perfectly flat, giving the skull the appearance

¹ I would refer here to a statement made by Humboldt, *Monuments Indigènes*, Pyramide de Cholula, p. 108. When the new road to Puebla was made (the one marked A B on the map of the Pyramid), a square house (*une maison carrée*) of stone was found, supported by beams, or pillars (*poutres* of *Cupressus disticha*), and containing two corpses, idols of basalt, and a great number of artistic vases, painted and varnished. He did not himself see the vases, but he states that this house was covered with adobe coatings of clay overlapping each other. Although it was plain that the building had no entrance, it is doubtful whether it was a sepulchre. The place where it stood is not in the interior of the mound, but on the lowest northern apron of it, and the greatest depth at which it could have been found could not have exceeded two metres (about six feet). It looks more like a very old house standing on that apron, and subsequently covered over, as is indicated by the strata of clay.

of half a dome cut in two vertically. The other was not much distorted, but had the forehead rather low and slightly sloping. They both appeared to be strongly prognathic, and lay imbedded in the adobe projecting from the mound. The skulls lay by themselves, and no other human bones or any objects were with them, and I saw them both, as well as their impressions in the adobe, which were at a depth of 1.50 metres (about 5 feet). The adobe appeared undisturbed. At

7. Two other skulls were found, but without the lower jaws, one of which I secured for the Museum at Cambridge. These were dug up beneath the adobe, at a depth of at least 5 metres (16 feet) from the surface. In addition to these skulls, human bones were found along the trenches opened by the railroad on the west side of the mound, but I could not learn any reliable details about their situation.

8. In the northwest corner of the court of his house, at a depth of $1\frac{1}{2}$ metres (5 feet), the Licenciado D. Antonio Daniel dug out of the soil a lot of funeral urns, not large, but well painted. They were arranged so as to surround the best one, beneath which he found a copper ring, which I saw. It was thickly corroded with green carbonate. In the northeast corner of the same court, Sr. Daniel dug up, at the same depth and in the same layer of earth, large vases, but less ornate. These contained human bones uncalcined, and with them complete skulls and also female trinkets. Close by, he uncovered foundations of adobe and stone.

9. Human bones were dug out of a low mound south of the Cerro de Acozac. No details were secured, but the fact appears positive.

10. Human bodies were disinterred in the corner of the block. No record was made and preserved of the mode of burial.

II. At the northwest corner of the house belonging to Don Antonio Ramirez, some eighteen years ago, a singular discovery was made, which I record here, although it does not strictly belong to instances of interment. A *metlatl*, or grinding-slab, was unearthed, with the entire skeleton of a woman bending over it, and beside her still lay the crushing-pin and ladle. The skeleton was, however, soon scattered by the Indian workmen, who generally have very little respect for the remains of their ancestors.

Of burials outside of the city of Cholula I have heard various reports. An Indian told me that, while ploughing in a field, he unearthed a clay vessel containing ashes and charred bones, which he threw out, and that the vessel soon afterwards was broken. Of the skeletons found in mounds on the banks of the Rio Atoyac I have already spoken. But D. Eusebio de la Hidalga, of Puebla, told me, that, a few days after my departure from Cholula, along the new railroad now in construction to San Martin Tezmelucan, and in the direction of Cuauhtlantzinco, very large clay vessels, with covers, had been exhumed, each containing a human body in a squatting posture. This information I consider reliable.

On the Hacienda of San Benito, the property of Don Francisco Aguilar, east of the beautiful cone of the Teoton, many remains of burials have been brought to light. The Indians invariably scattered the bones before Sr. Aguilar could reach the spot, but another person stated that the bodies lay extended. Along with them stone heads were found, two of which I saw. The largest one is of black lava, of almost natural size, and much worn. The other, though smaller, is flat, and of a greenish, very hard rock, fragments of which I found only at the bottom of the deep barranca of Atiopan, near Calpan. San Benito now lies in the district of Atlixco, but it formerly belonged to the range of Huexotzinco

and Calpan, and there is no doubt but that the settlement there, of which many vestiges are still visible, had ceased to be occupied before the time of the Conquest.

None of the data here collected are of very much significance ; but enough can be gathered to suggest several distinct modes of burial, implying occupation of the soil at different periods of time. The most recent one, belonging to the time of the Conquest, according to Rojas, is clearly illustrated by the round grave found at 4. Urn-burial I consider as established, from the character of the authorities from whom I derive my information ; but cremation, although not improbable, is not yet absolutely proved to have existed. The find on the Rio Atoyac is authentic in the main, and seems to indicate mound-burial in masses, but the details are too vague to permit any conclusions to be drawn. Finally, the graves at San Benito, of whose existence also I am satisfied, are too imperfectly described to suggest even the mode of burial. The last two localities are, beyond all doubt, much older than the Nahuatl pueblo of Cholula, which Cortés saw in 1519. The urn-burial near Cuauhtlantzinco also occupies a site of which no tradition is left. Should, therefore, cremation not be proved, or should it be established that its practice was coeval with one or the other of the customs mentioned, there would be at least three different aboriginal modes of disposing of the dead, which suggest as many distinct stocks, succeeding each other in occupation of the territory of Cholula.

I have already stated my inability to find, in the whole district, any satisfactory remains of house architecture. The reason for this is easily explained by the fact that Cholula was not destroyed and abandoned, but gradually transformed by improvements in the style of architecture and in materials. Previous to the Conquest, the Indian knew nothing of burnt



DOORWAY. SAN ANDRES CHOLULA.

lime or of brick.¹ His building-stone was not hewn, it was hammered or broken, and polished by simple friction when his fancy demanded it. I saw but a single broken wall to which I can assign an origin prior to the coming of the Spaniards. This wall stands inside the court of a dwelling in the Calle de Herreros, at Cholula, and in some places is 0.50 metre (20 inches), or even 1 metre (39 inches) high, and 0.83 metre (32 inches) thick, and is made of broken stones of various sizes, imbedded in common adobe soil. In method of construction, thickness, and material, it agrees perfectly with the body of the walls composing the buildings of Mitla. It is probable that, as at Mitla, these rough walls were faced with polished blocks to prevent deterioration by rain; but of the kind of facings it is not easy to form a conjecture.

The keystone of the flat arch of a doorway in a house fronting on the Calle Real bears a half-effaced sculpture of the head of an eagle, which strikingly resembles those of Santa Lucia Cosumalwhuapa in Guatemala, and the head of the great eagle which Dr. A. Le Plongeon has discovered in the course of his remarkable explorations at Chichen-Itza, Yucatan. In the court of the same house I discovered fragments of another stone with the same design, and finally the four eagles on the doorway from San Andrés Cholula (Plate XII.) are exactly similar. These four specimens are the only examples of polished stonework which I regard as

¹ The question of burnt lime is an interesting one. Rojas, *Relacion*, etc., § 31, says: "Y la cal (la trap.) de la ciudad de los Angeles." And I have not seen any burnt lime in any Indian building of old date. It was always pulverized carbonate of lime, and therefore unburnt. The Spanish expression "cal y canto" has nothing decisive beyond indicating a stone wall. Thus Torquemada calls the houses of Cholula, "eran de cal y canto." I found the stone wall of the Tecpan to consist of broken stone and common earth, not mortar. From the circumstance that we have no description of how they burnt lime, nor even a statement that they burnt it, I infer that the art was unknown to them.

probably dating back to aboriginal times at Cholula, and their appearance has convinced me that they were not hewn, but broken by hammering, and afterwards rubbed down to smoothness and approximate squareness.

We have no description of the houses of Cholula, as they appeared to Cortés and to his followers, but we may well substitute that of the Indian houses of Tezcoco left us by the native author, Juan Bautista Pomar, in the year 1583. Many of these houses are still standing.

“The form and construction of their houses is low, with no upper story whatever; some of them are built of stone and lime, others of stone and simple clay, the most of them of adobe, which is chiefly used in this city. To-day we find buildings thereof as strong and perfect as if they were new, although they are over two hundred years old. The covering is of beams, and, instead of planking, there are small strips so well fitted together that none of the earth which forms the top can run through. Most of them enclose a court, around which are the rooms which they require; their dormitories and reception-rooms for the men in one section and for the women in another, — their storage places, kitchens, and corrales. The houses of the principal men and chiefs, particularly those of the kings, are very large, and have such massive woodwork that it appears almost impossible that human strength and industry could have put it in place, as is to be seen to-day in the ruins in this city, and especially in those of the house of Nezahualcoyotzin, which is in the square. More than one thousand men might be lodged in them. They stand on platforms, the lowest of which are one fathom high, and the highest five to six. The largest rooms are halls twenty fathoms or more long, and as many wide. They are square, and in the middle are many wooden pillars at a fixed distance from each other, resting on great blocks of stone; and on these

the rest of the woodwork is supported. These rooms have no outer doors, only doorways with wooden pillars like those inside, three fathoms wide. As these posts were of wood, and exposed to the sun and rain, they did not last long, but rotted below, and thus the house fell down. Still they did not decay so rapidly but that rooms remain which were built one hundred and forty years ago. From this we may conclude that, if the woodwork were covered and sheltered from rain, it would last much longer. This house is built around a court, very large, with the floor of a white composition, very bright, and steps around it by which to ascend to the great halls and rooms which surround it. . . . The character of the houses of principal and rich men is similar, but they are small in comparison with the royal ones, although, as it has been stated, all rest on platforms."¹

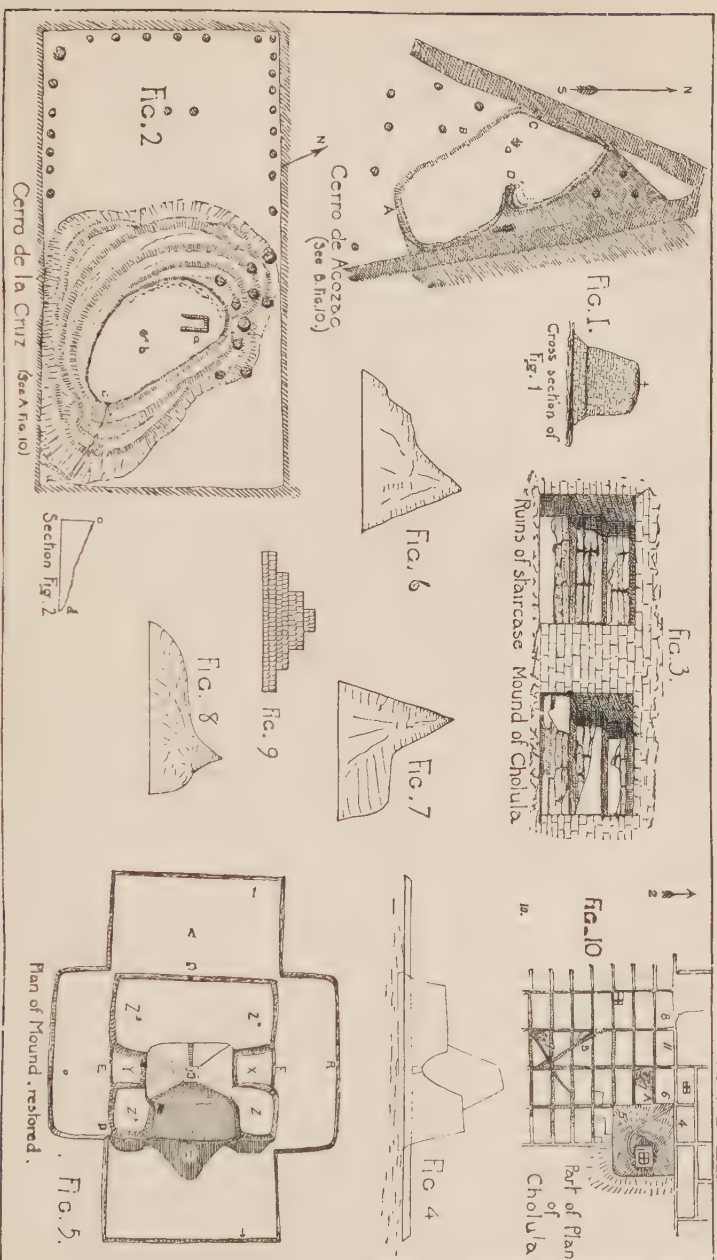
There is no reason why the architecture at Tezcoco, whose people belonged to the same linguistic stock as those of Cholula, should have differed materially from that of the latter pueblo. The roof is of identical construction, and we easily recognize in the so-called "royal houses of Nezahualcoyotzin," at Tezcoco, the "Tecpan," or official house, of which Cholula may have had two. Wood and stone were more easily obtainable at the former place than at the latter. For its building material, adobe excepted, Cholula was dependent upon the slopes of the volcanoes, held by the tribe of Huexotzinco. I am, therefore, of the opinion, that the old pueblo of Cholula was mostly built of adobe, that walls of stone were only erected in exceptional cases, such as of official buildings, and that stone also may have been used for foundations and occasionally for ornaments. Lintels and doorposts, however, were probably of wood, as at Tezcoco. The perishable na-

¹ *Relacion de Tezcoco*, MS. The original, which belonged to San Gregorio at Mexico, has since disappeared.

ture of this, and the friability of the adobe, are sufficient reasons why so few vestiges of aboriginal Cholula are left, and why, in the sixteenth century, its architecture was so quickly supplanted by one of better style and of more durable material.¹

Of the religious structures of former times at Cholula the same vestiges still exist, which Rojas speaks of as two artificial hills close by the great mound. These are called respectively "Cerro de Acozac" and "Cerro de la Cruz." The Cerro de Acozac stands about 400 metres (1300 feet) southwest of the present boundary of the great mound or "Pyramid," on the outskirts of the city, and in its southeastern ward. (Pl. XIII. Fig. 10, B.) In 1641 it belonged to the "barrio" of Santa Maria Tecpan, and I infer that such was the case in 1519. From the ground plan (Pl. XIII. Fig. 1), it will be seen that it forms an irregular trapeze, whose longest side (the north-eastern front) measures 45.3 metres (149 feet), the shortest (southeastern front) 16.7 metres (55 feet), the whole perimeter being 123.6 metres (405 feet). It is a fragment with perfectly vertical sides, about 15 metres (49 feet) high, and, if ladders are not on hand, it is accessible only through a crevice on the northeast front. Its top is overgrown with thorns and shrubs, and bears a cross. It can readily be seen, that the whole forms a solid mass of adobe bricks, without interior chambers; but as to its former size I am unable to form any conjecture, although I believe the height to be unchanged. The whole mass rests on adobe foundations which just appear above the ground on the higher sides, that is, A, B, and C, while at D, which is cut down $1\frac{1}{2}$ metres

¹ Rojas, *Relacion*, etc., § 31. "Las casas están edificadas y se labran hoy al modo que labran los Españoles, de piedra tosca, ladrillo y adobe, cubiertas de azotea, encaladas, las portadas son todas ó de piedra parda y negra labrada de sillería ó de ladrillo que aqui se hace." Compare Torquemada, *Monarchia*, etc., lib. iii. cap. xix. p. 282.



(5 feet) deeper, they are so much the more exposed. The bricks, laid approximately level in adobe earth, measure $0.57 \times 0.28 \times 0.12$ metre ($23 \times 11 \times 5$ inches, in the foundations, while the superstructure, as far as I could investigate, appears to consist uniformly of bricks measuring $0.41 \times 0.17 \times .08$ metre ($16 \times 7 \times 3$ inches) each. Throughout the entire mass no ledges of stone are to be seen.

I have met with but one interpretation of the word "Acozac," this is, impregnable wall. It may be asked whether it may not be derived from "aco," above, and "zacatl," grass; but I do not think that this is the case. The same authority states that it was possibly called also "Ixtenextl."¹ "Tenextli" is lime, or any substance which has lost its color, as the word "Ixtenextic" (discolored object) indicates. The name seems to be destitute of meaning so far as concerns the object and the history of the monument, and I could not learn any tradition about it.²

The recent excavations made for the railroad to Matamoros-Yzúcar have disclosed the fact, that the foundations of this artificial hill are not connected with the boundary of the great mound itself; that it stood completely isolated. But it is worthy of notice, that adobe bricks of the same size which compose the base of Acozac also form the whole of its northern neighbor, the Cerro de la Cruz.

This mound, marked A (Pl. XIII. Fig. 10), a ground plan of which is given in Fig. 2, stands about 250 metres (800 feet) north-northeast of the former, and about 110 metres (350 feet) due west of the Pyramid itself. Its longitudinal axis runs very nearly north and south, and has a length of about 158 metres (518 feet), while the perimeter of the

¹ *La Pirámide de Cholula*, MS., note 4. Humboldt, *Essai Politique*, etc., lib. iii. cap. viii. p. 154.

² The MS. already quoted gives it another name, "Tenochcatzin." *La Pirámide de Cholula*, note 4.

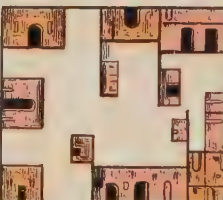
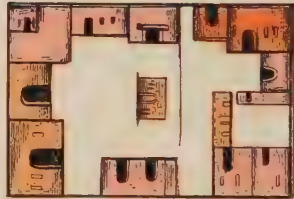
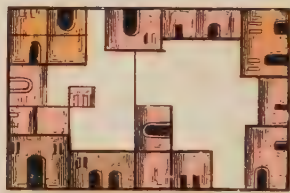
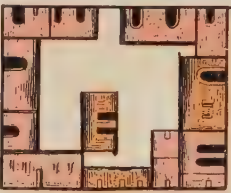
base, of which the form is very nearly that of an oyster-shell, is approximately 375 metres (1230 feet). Its sides are not vertical, like those of Acozac, but sloping in every direction except in the northeast, where they descend in abrupt narrow ledges. The slopes are overgrown with the usual weeds and cactuses, and groups of copal trees stand on the northeastern declivity. The height of this mass, which looks precisely like a natural hill, is 13.5 metres (44 feet), and it is all of adobe bricks laid in adobe clay. The layers appear to be undisturbed, and their size has been given above. The top is in the form of an irregularly elliptic plane, partly covered with verdure, and its perimeter measures about 160 metres (496 feet). On it stands a cross, and near the northeast corner there are foundations of red brick, 11.7×6.7 metres (38 ft. 4 in. \times 22 ft.). These are the ruins of a chapel begun there in 1873 by an inhabitant of Cholula, but which was left unfinished upon his death. The hermitage that formerly stood on the same spot had been destroyed in 1847.

According to a tradition current at Cholula, it was on this mound that Cortés caused the first mass to be said, in 1519. I have not met with any documentary proof of this belief, but it is not at all impossible.¹ Many traditions of Cortés cluster about the portion of the town which borders upon the Cerro de la Cruz. The street leading up to it from the Calle Real is called Calle del Padre Olmedo, and the house on the former street opposite the church of San Pedrito, over whose doorways a fragment of the Spanish imperial coat of arms, rudely carved, is still to be seen, contains in the inside the blazon of the city of Cholula, and it is said that here Cortés was lodged, and the so-called "massacre of Cholula" began. The corner of Calle Real and Calle de Chalingo is still designated

¹ Bernal Diez, *Hist. Verdadera*, etc., cap. lxxxiii. p. 77, speaks of the erection of a cross and "humilladero" (shrine) by the conquerors at Cholula, but does not mention the spot where they were placed.



Angelus
h. h.

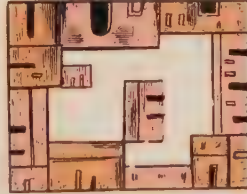
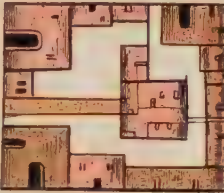
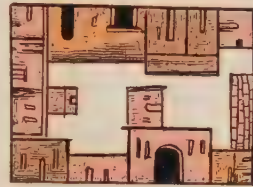
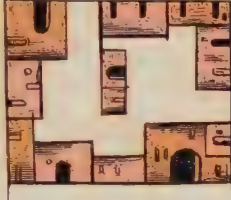


Flaxcollan
h. h.

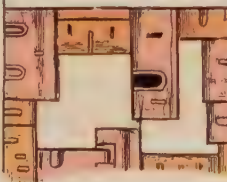


Eng'd. and Printed by the Mass. Eng. Co. N.Y.

Facsimile of an old map of Cholula



acapellatam
oto fl.



de in 1581 now belongs to Joaquin Garcia. —
ICAZBALCETA, CITY OF MEXICO.

by the Indians as Ezcoloc (place where blood flows across).¹ The obsidian flakes, knives, cores, etc., etc., so profusely scattered over the whole town, are most abundant in this same region. If, as all this seems to indicate, the Spaniards were quartered there, then the tradition that the Cerro de la Cruz was the place where the first mass was said does not appear improbable.

Along the base of Acozac, and about this mound, conch-shells and much pottery have been found, and several large slabs of yellowish limestone, which seem to have been inserted vertically in the base of the hill. A number of fragments of these, some as large as two metres by one (6×3 feet), and 30 to 40 centimetres (12 to 16 inches) thick, are to be seen in several places in the city. This stone appears to have been brought from the east side of the Atoyac, near Puebla, and the pieces are approximately square, and smooth on both faces; but the smoothness looks more like that of use than of artificial polish. No other trace of workmanship is visible upon them, and I cannot comprehend on what grounds popular belief at Cholula regards them as parts of the "stone of sacrifice." There is absolutely nothing in the appearance of the slabs that resembles any of the forms known to us of sacrificial stones from Mexico.²

The Cerro de la Cruz is a solid hill of adobe bricks, of uniform size, laid horizontally. But between the courses, near the base of the structure, a seam of white, tolerably hard concrete, 0.05 metre (2 inches) thick, is inserted. This ledge, as I learned by testing it with muriatic acid, is composed of

¹ *La Pirámide de Cholula*, note 4: "Por esa razon conserva la esquina referida el nombre de Ezcoloc, que quiere decir, lugar adonde cruzó, ó corrió la sangre." The etymology is correct. "Eztzli" is blood, and "Colotzin" cross. But it might also be derived from "nitla-coloa," to go around, to bend, to wind or curl. Molina, *Vocabulario*, ii. fol. 24.

² Orozco y Berra, *El Cuauhticalli de Tizoc*, in the *Anales del Museo*, vol. i. no. I.

carbonate of lime, mixed with small fragments of lava and minute pebbles, and therefore appears to be artificial.

There can be no doubt of the fact that the two mounds, which I have now described, were originally mounds of worship. As such they formed truncated pyramids, each supporting one, or perhaps two, small structures, like chapels, resembling towers in their size and isolated position. Examples of this kind of architecture are still to be found preserved in many places throughout Mexico and Central America. Such are Papantla and Tuzapan on the coast of Vera Cruz, Huatusco on the western slope of the Cordillera in the same State, Monte-Alban in Oaxaca, Tehuantepec in the same State, Palenqué in Chiapas, and Uxmal, Chichen-Itza, and others in Yucatan.¹

It may be interesting to compare what one of the earliest missionaries, the celebrated Motolinía, says of the mode of construction of Mexican mounds of worship. After describing the square court surrounding the mound or mounds, he continues as follows :—

“In the most prominent part of this court there stood a great rectangular base, one of which I measured at Tenanyocan in order to write this ; and found it to be forty fathoms from corner to corner. This they filled up solid, stuffing it within with stone, clay, adobe, or well-pounded earth, and faced it with a wall of stone ; and as it rose they made it incline inwards, and at every fathom and a half or two fathoms of height they made a stage. Thus there was a broad foundation, and on it walls narrowing to the top, both by reason of the stages as well as by the slope, until at a height of thirty-four to thirty-five fathoms the teocalli was seven or eight fathoms smaller on each side than below. On the west side were

¹ For plates of all these edifices I refer the reader to Bancroft's *Native Races*, vol. iv., and Short's *North Americans of Antiquity*.



THE GREAT MOUND OF CHOLULA.

the steps by which to ascend, and on the summit were erected two altars close by the eastern edge, not leaving more space behind them than sufficient for a walk. One of these altars was on the right, the other on the left, and each one had its walls and roof like a chapel. The large *teocallis* had two altars, the others one, and each had its covered house. The great ones were of three stories over the altars, with their ceilings fairly high. The base also was as high as a great tower, so that it could be seen from afar. Each chapel stood by itself, and one might walk around it, and in front of the altars there was a great open space where they sacrificed.”¹

It is perhaps possible that the great slabs previously mentioned, found on the lower slopes of the Cerro de la Cruz, may have belonged to the stonework of one of its former stages, where the stairway ascended to its summit.

East of the Cerro de la Cruz, separated from it by cultivated lots containing magueys and an occasional copal tree, arises the colossal mound to which, since the time of Humboldt, the name of the “Pyramid of Cholula” has been given. (Plate XIII. Fig. 10, and Plate XIV.) It stands out boldly, with the beautiful church of Nuestra Señora de los Remedios on its summit, almost overshadowing the town of Cholula beneath. From the upper platform there spreads out a wide landscape, while it is itself also a landmark visible from a great distance. This is due partly to its isolated position, partly to its enormous size. (See Plate XVI.)

In close proximity the mound presents the appearance of an oblong conical truncated hill, resting on projecting platforms of unequal height. The term “pyramid” I do not regard as proper, and shall henceforth avoid it altogether, using the more simple and adequate one of “mound,” which corresponds to the current native designation, “cerro.” Over-

¹ *Hist. de los Indios de Nueva España*, Trat. i. cap. xii. pp. 63, 64.

grown as it is with verdure, and partly by trees, and with a fine paved road leading to the summit, it looks strikingly like a natural hill, along whose slopes the washing of the rains and slides have laid bare bald bluffs, and into whose bulk clefts and rents have occasionally penetrated. The projecting platforms both north and south (X and Y, Plate XIV.) are cultivated, and there are even traces of former tillage on the higher plateaus (Z^1 and Z^3).

The mound stands outside of the town, and is mainly surrounded by fields of maguey. There are a few buildings along its base, but on the north side the structures of the new railroad are fast springing up. It can be regarded as bounded by roads on three sides. On the north is the high road (A B) leading to Puebla; on the south, the path (C D) in the direction of San Andrés Cholula; the west fronts upon the Calle de Monte Alegre (A C); the east terminates in a field. These roads give the sides of the mound a direction of from W. 25° N. to E. 25° S., and from N. 25° E. to S. 25° W.; but this may not in the least indicate their original lines. Its base now forms a trapeze, whose sides, including their irregular windings, gave me the following measurements:—

North line (A B)	. . . . .	305 metres, or 1,000 feet.
East line (B D)	. . . . .	313 “ 1,026 “
South line (C D)	. . . . .	254 “ 833 “
West line (A C)	. . . . .	305 “ 1,000 “
Total perimeter	. . . . .	1,177 metres, or 3,859 feet.

This gives an approximate area for the base of over 20 acres.

Within this area, if we start from the point G eastward, we meet successively the following stages (compare plan and section G H). On a base length of 27.2 metres (89 feet), we rise 21.8 metres ($71\frac{1}{2}$ feet), to the top of the platform Z^3 and Z^4 , whose average width there is about 65 metres (213 feet),

although owing to decay it now varies greatly. This platform is obliquely intersected by the paved road of Spanish construction, exposing vertical faces of adobe along its north side, and shaded by beautiful ash trees. The northern side of this platform (Z^1) is higher and more decayed than the southern section (Z^3); it is also smaller and more overgrown. The trees on the latter arise almost exclusively upon its abrupt brink and slope, while they partly crown the top of the former. On the eastern limits of this platform begins a steep rise, amounting to 20 metres (66 feet) on a base line of 33 metres (109 feet), to the summit of the whole structure, a polygonal platform, paved and surrounded by a fine wall. To this we ascend from the west by a broad stairway of hewn stone, 3.4 metres (14.2 feet) wide, also of Spanish origin. A portal with a stone cross inside it forms the landing. Four cypress trees are planted on this upper plateau, which forms a court around the shrine of Nuestra Señora de los Remedios (J). The length of the plateau from west to east is approximatively 61.7 metres (203 feet); the breadth from north to south, 43.9 metres (144 feet). There are two more entrances to the upper court, one on the north and the other on the south, to which paved roads, and not steps, lead. The present appearance of the summit is entirely due to the Spaniards, as there is not a trace of aboriginal work upon it. The eastern descent from the plateau to the point H is, as the section shows, an uninterrupted slope of 44.8 metres (147 feet), perpendicular on a base-line of 72 metres (236 feet). It is much more abrupt and more densely wooded than the western.

If we ascend the mound from its south side at E (see section B), we cross the cultivated area Y, 23.6 metres (77 feet) wide, with a rise of only 16 metres ($5\frac{1}{2}$ feet); then up a slope 24.4 metres (80 feet) in vertical elevation by 34.3 metres (112 feet) base, above which is another platform 3.3 metres (11 feet)

vertical by 39.6 metres (130 feet) base; then a slope 11.3 metres (37 feet) by 24.3 metres (80 feet), to the top. Crossing the top and descending to the northward, there is first a slope of 17.8 metres (58 feet) base, and 3.5 metres (8½ feet) height; afterwards a steep declivity, overgrown with cactuses and thorny bushes, 32 metres (105 feet) in vertical elevation by only 14.3 metres (47 feet) base, which terminates on another platform 46.7 metres (153 feet) wide (marked X), which is cultivated. The latter stands, on its northern border, 6.7 metres (23 feet) lower than the foot of the slope. Finally, an abrupt descent of 8.9 metres (29 feet) brings us to the level of the Puebla road, whose width to F is 20.6 metres (68 feet) at the place where I measured.

It will be observed, by the sections as well as on the map, that I began my measurements at points lying beyond the three roads enclosing the mound. This was done because on three sides I found layers of adobe connected with the structure, and reaching far outside of the points G, F, and E. To determine the height of the mound, therefore, I must start from the spots marked respectively H, V, R, and P, and these afford the following results:—

From the north or north-northeast (R)	62.7 metres, or 206 feet.
From the east (H)	44.8 “ 146 “
From the south (P)	44.7 “ 146 “
From the west (V)	54.5 “ 179 “

The average altitude, therefore, is 51.7 metres (169 feet). Other determinations do not vary much from this. Thus Humboldt found it 54 metres (177 feet),¹ and the others vary between the extremes of Brantz-Mayer (165 feet) and of Prescott (208 feet).² All these figures may be correct, according to the base adopted.

¹ *Vues des Cordillères et Monuments Indigènes*, vol. i. pp. 105, 106.

² Bancroft, *Native Races*, vol. iv. p. 472, note 13.

If now we turn to the topography of the structure as far as delineated, we shall find,—

1. A platform (Z^3 and Z^4) of unequal height, lying along the entire western front.

2. An oblong central mound, bearing the upper plateau (J).

3. The depressions X and Y, respectively north and south of the latter.

4. The platforms Z^1 and Z^2 , northeast and south of the central cone. These platforms are both higher and smaller than the great western projection. They descend abruptly to the east, and between them the upper mound also sweeps down in an uninterrupted steep slope.

The whole structure, therefore, as it now is, does not present the appearance of a pyramid, but of three distinct projections, surrounding and supporting a conical hill, and separated from each other by wide depressions.

The entire mass consists of adobe bricks laid in adobe clay, undisturbed except where erosion, earthquakes, or the hand of man have mutilated it. The bricks "break joints," and are of various sizes. I have measured them at many places, and have found so far seven different dimensions. These sizes are:—

a. On the western slope of Z^3 , fronting the Cerro de la Cruz, $0.52 \times 0.32 \times 0.14$ metre ($17 \times 13 \times 6$ inches).

b. In bluffs of Z^4 exposed by road, $0.58 \times 0.27 \times 0.10$ metre ($23 \times 10 \times 4$ inches).

c. In the central mound, $0.54 \times 0.30 \times 0.12$ metre ($22 \times 12 \times 5$ inches).

d. Along the base of Z^1 , and at the southern base of top, $0.50 \times 0.24 \times 0.12$ metre ($20 \times 10 \times 5$ inches).

e. At H, 0.40×0.18 metre (16×7 inches), height doubtful.

f. In Z^1 , above those of the fourth size indicated, and along the slopes of Z^2 , $0.47 \times 0.20 \times 0.09$ metre ($19 \times 8 \times 4$ inches).

g. In the northwest corner of X, northeast corner of Z^2 , and southwest base of central cone, $0.52 \times 0.26 \times 0.12$ metre ($21 \times 10 \times 5$ inches).

The sizes appear to be irregularly distributed, the central mound alone being made, as far I could see, of uniform bricks of size *c* down to nearly 30 metres (98 feet) below the top; this was the case on one side at least. Of the others, *d*, *f*, and *g* seem to compose the platforms Z^1 and Z^2 and the depression X, whereas the projections Z^3 and Z^4 have the large sizes *a* and *b*. The latter size comes near to that forming the Cerro de la Cruz and the foundations of Acozac. The bricks are all made without straw, but much broken pottery and bits of obsidian are found in the mass, although it is not always positively clear whether they belong to the bricks or to the mud between, and how far they may have been washed in by rain; for the mound has suffered considerably from erosion, and consequent slides. There are many deep fissures which show, as do also the perpendicular cuts marked on the map, that the mass is probably solid throughout, without interior cavities, and, if there is a natural hill in its centre, that it must be at all events a very small one. In some places, particularly in the northeast corner, there are bluish alkaline efflorescences.

Throughout the entire structure (except the platform Z^2 so far as its walls are exposed), there are horizontal ledges of a whitish composition, or concrete. These ledges are from 0.05 to 0.15 metre (2 to 6 inches) thick, are hard, and composed, like those of the Cerro de la Cruz, of carbonate of lime mixed with small pebbles and bits of lava. I have not seen this material on any vertical surfaces, except on the steps

of which I shall speak hereafter. The ledges do not run through the whole mass, but seem to occupy different altitudes in different places; they are sometimes 1 metre (3 feet), sometimes several metres, from each other in level. At the base of the western front, the same substance seems to crop out everywhere, nearly at the level of the street, and it reappears beyond it, between the mound and the Cerro de la Cruz, though in places it has been destroyed in the process of tillage.

One or two fragments of white stone, similar to those extracted from the Hill of the Cross, protrude along the southwestern slope of the central cone; they are much weather-worn, and appear somewhat displaced.

But the most interesting discovery of all, perhaps, was that of regular stone steps, forming flights of stairs. They were distinct in three places, and traces were met with in two more. On the north side, in bricks of the size *f*, and close by those of the size *g*, what appears to be a pillar of stonework overhangs the Puebla road. Its width is about 1 metre (3 feet), and it is nearly three times as high. It is constructed of slabs of light-colored limestone, broken, and neither hewn nor polished, superposed in courses laid in adobe mud, and generally 0.10 metre (4 inches) thick by 0.30 metre (12 inches) wide. I was informed by the Licenciado Ybañez that it was a ruined stairway. The body of it appears, therefore, to have been sunk into the adobe nearly 2 metres (6 feet). I afterwards found well-preserved steps in the northeastern slope of Z^2 , where it joins the top mound, and on the southern base of the latter. In the former place there were three steps, each 0.40 metre (16 inches) high, but of unascertainable width. Both their faces were covered with a very thin coat of a white composition, analogous to the one composing the ledges, which, like them, gave a strong effervescence when treated

with acids. Beneath it were thin slabs of stone similar to those which compose the pillar on the north side. Still higher up, there were, in a recess, remains of similar steps, but not in a line with the lower ones, which would imply that the stairway was winding, or at least zigzag.

The best preserved specimen, however, is the one on the south side, a view of which is given in Plate XIII. Fig. 3. Here there are two flights of stairs alongside of each other, each 2 metres ($6\frac{1}{2}$ feet) wide, and separated by an adobe wall, 1 metre (39 inches) thick. The bricks in both places are of the size *g*, and the separation is undisturbed, which shows that two parallel stairways were originally built alongside of each other. Upon re-examining the eastern locality, I found there the same feature; namely, after an interval of one metre of adobe to the north, other traces of steps, which implies also two parallel flights of stairs.

Near to H, I found adobe whose vertical face also is covered by the same white composition, and on the western platform, in the cuts exposed by the road, is *débris* which may possibly indicate the former existence of steps there also.

Finally, I have to mention that, beneath the lowest adobe of the north and south sides irregular blocks of "tepetlatl" or yellow indurated clay, imbedded in adobe mud, appear in two places. It is apparently the foundation; but in Cholula it is believed that even below these the structure rests on short upright pillars of stone. If such be the case, I was unable to obtain any proof of it.¹

Having now finished the sketch of the main body of the

¹ In the adobe of the lowest western apron a block of lava has been found, which I saw. It rested at a depth of 2 metres (6 feet), standing on its edge, but the adobe around was not tilted nor in any way disturbed. Its diameter was 0.61 metre (2 feet), its height from 0.11 to 0.15 metre (4 to 6 inches). The top was convex, like an inverted bowl, and it looked very much as the top of the great pillars at Mitla would, if broken.

mound, I turn to such traces of edifices as surround it, in order to find out how far they may originally have been connected with the hill.

The railroad cuttings along its western front have exposed an uninterrupted layer of adobe bricks, measuring $0.56 \times 0.23 \times 0.12$ metre ($22 \times 9 \times 5$ inches), with but one single ledge of concrete visible. This has a thickness not exceeding 4 metres (13 feet), if it reaches that dimension in any place, and extends so as to form a vast apron, possibly 400 metres (1300 feet) from north to south, and about 200 metres (650 feet) from east to west. It is on this apron that the Cerro de la Cruz stands, and in or below it the four skulls were exhumed which I have already mentioned. Besides these and the bones, the adobe, which lies perfectly undisturbed, has yielded some pottery, one or two clay flutes, and much obsidian. But nowhere, to my knowledge, did there appear foundations of houses.

On the east side are visible fragments of adobe hills, directly joining the mound at S, composed of bricks of the size *g*; and almost due east of H, at T, a low terrace crops out, built of bricks measuring $0.43 \times 0.23 \times 0.10$ metre ($17 \times 9 \times 4$ inches). The distance between H and T is about 160 metres. The intervening space has been ploughed, but often fragments of adobe are brought to light throughout the entire field up to the path bounding the mound on the south. Fragments of ancient "metlapilli" and of very old pottery are very abundant there, and it is the general belief at Cholula that an apron existed there similar to the one on the western side, which would have been about 300 metres (1,000 feet) from north to south by 200 metres (650 feet) from east to west.

On the south side the slope runs out in the road E P, of which E is 4.1 metres ($13\frac{1}{2}$ feet) higher than P, the whole

distance between the two points being 61.1 metres (200 feet). There are fragments of adobe, S, S, on both sides of this road, which itself shows traces of it. The field beneath is cut down abruptly, and yields much obsidian and pottery. All these are indications, that another apron extended to the south, about 60 metres (200 feet) from east to west, and some 300 metres (1,000 feet) in a north and south direction.

The north side presents some seeming complications. The point R is 70 metres (230 feet) from F, and 11.6 metres (38 feet) lower. The fragments S, S, as well as the mound Q, are both artificial, and their bricks are exactly the size (*g*) of those of the great hill. The top of the mound is about at the level of X. The road R F shows adobe on both sides; and the inference is therefore not improbable, that the space north, which the points O R Q F define, formed another spur on the lowest platform, whose area may have measured about 70 by 400 metres (230 by 1300 feet), and of which the road F P, the fragments S, S, and the circular mound Q, are the only vestiges remaining.

Although the restoration of ruined structures is always a very doubtful undertaking, it sometimes is difficult to avoid making the attempt. In the case of the great mound, before attempting the dangerous task of re-establishing its former shape and of approximating to its former size, I must carefully investigate its condition at the time of the Conquest, in order to ascertain as nearly as possible the changes which the past 362 years may have wrought.

Bernal Diez speaks of the chief temple of Cholula as being higher than that of Mexico and having 120 steps.¹ But this edifice was not the great mound, and it has since disappeared,

¹ *Historia Verdadera*, cap. xcii. p. 92: "Mas era de otra hechura que el mejicano, é asimismo los patios muy grandes é con dos cercas." The latter certainly cannot apply to the great mound.

as we know from Rojas, and its site is occupied by the convent.¹ The earliest picture we have of the mound is on the coat of arms granted to Cholula in 1540, and the first mention of it is about the same year, from the pen of Motolinía. This blazon, cut in black lava, is preserved in one of the houses on the corner of the Calle Real and the Calle de Chalingo, and on it the great mound is represented as on Plate XIII. Fig. 9. It suggests a four-storied pyramid with a truncated top.

Motolinía briefly mentions that it measured a good cross-bow shot from corner to corner, and in height also,—a very unsatisfactory statement,—and that it was overgrown at his time with trees and shrubs, and much ruined. He came to Mexico in 1524, and certainly saw Cholula and its mound within ten years after the Conquest. "There are on it now many rabbits and snakes, and in some places are fields of maize." (1540.) On the top was "a small old temple," which the Cholutecos affirmed was much larger in former times.²

Sahagun only mentions the "cerro, ó monte de Chollan," stating it to be artificial, and that it was made for purposes of defence.³

A detailed description, of great merit, is furnished by Rojas: "In this city there is no other fortress than an extremely ancient hill within it, made by hand, all of adobe, which was formerly rounded,⁴ and now, by the blocks of the streets, has

¹ *Relacion*, etc., § 14.

² *Historia*, etc., Trat. i. cap. xii. pp. 65, 66.

³ *Historia General*, etc., "Introduccion," vol. i. pp. xvi. and xvii.: "Los Cholultecas, que son los que de ella (Tulla) se escaparon, han tenido la sucesion de los romanos, y como los romanos edificaron el capitolio para su fortaleza, así los Cholulanos edificaron á mano aquel promontorio que está junto á Cholula, que es como una sierra ó un gran monte, y está todo lleno de minas ó cuevas por de dentro." Of the latter there are no traces. Lib. x. cap. xxix. vol. iii. p. 141: "Pues manifesta estar hecho á mano, porque tiene adobes y encalado."

⁴ The term "redondo" also means *angular*, *polygonal*, in old Spanish. The Pueblo Indians of New Mexico frequently call their "plazas" *redondas*, although they are square or rectangular.

been made square. Its base has a perimeter of twenty-four hundred ordinary paces, and it is forty ells high, and on it there may be room for ten thousand persons. From the middle of this base the hill rises again, as a round mass, forty ells more, so that the entire altitude is eighty ells, to the summit of which one can ride on horseback. On the top there is a level space affording room for one thousand men, and in the middle a large cross is planted. It is of wood with a pedestal of stone and lime, and stands on the identical spot where during the time of paganism was the idol Nauhquiauhtl, as I have said. In the hill which this space makes there is still to be seen a foundation of stones, which appears to have been of some balustrade or buttress there erected. This is the famous mound, celebrated as much for its having been made exclusively for the seat of that idol, as for being a work of such magnitude. . . . Before the Spaniards conquered this land the hill did not terminate in a level, but it was convex, and the friars had it levelled in order to plant on it a cross.”¹

Torquemada says the mound was never finished, and at his time it was completely overgrown and decayed, but that nevertheless it could be distinctly seen that it once had “stages.” He further gives it a perimeter of “wellnigh a quarter of a league.”²

The Cavaliere Boturini, who wrote about the middle of the eighteenth century, after stating that the mound was “four stories” high, and that it was composed of four superposed terraces, adds: “The top was reached by a fine road, winding up to it like a serpent, as it is seen in a painting made of paper of ‘Metl,’ which I have in my archives.” This how-

¹ *Relacion*, etc., § 32.

² *Monarchia*, etc, lib. iii. cap. xix. p. 281; lib. xvi. cap. xxviii. p. 203. The latter is copied from Mendieta, *Hist. Eccles. Indiana*, lib. iii. cap. xlix. p. 310, at least in part.

ever refers to the Spanish roads, and not to the Indian stairs. The painting in question dates from after 1594.¹

It is clear that, among all the evidence produced, that of the coat of arms of Cholula, and the statements of Motolinía, and especially of Rojas, deserve most attention. We may safely conclude from them, that the shape and size of the mound have not changed much since the Conquest. The sculpture in the blazon of the Spanish city is an ideal picture, not intended for an accurate copy of nature, and therefore the four terraces should not be regarded as indicating strictly the relative position of the four parts. Rojas, however, mentions only two parts, a broad terrace and a conical hill arising from the centre, and it is clear that this description applies to the identical mound which now is regarded as such. The two roads which intersect the mound on his map are the same ones forming its boundaries north and south at present, and it will be seen that there are fragments left on both sides, thus confirming my assumption of two aprons extending beyond the present bulk in the directions named. That these aprons were lower than the platforms Z^1 , Z^4 , Z^2 , and Z^3 , is shown, on the north side, by the landing of the steps there discovered; on the south, by the stairway which indicates the original slope of the surface. If the *débris* on the west side of Z^4 is, as I incline to believe, also the remnants of stairs, then the Calle de Monte Alegre marks the western front of the platform Z^3 and Z^1 , descending, as it does now, upon the western apron, whose layers of adobe are still spread, undisturbed, over so large an area.

In the east the stairway on the northeast corner of Z^2

¹ *Idea de una Nueva Historia*, etc., pp. 113, 114. Clavigero, *Storia del Messico*, lib. ii. cap. ii., has, in a foot-note, very ably disposed of this tale. He justly remarks that the painting in question is of late origin. The first chapel or shrine was erected on the top of the great mound in 1594. Mendieta, *Hist. Ecclesiastica*, etc., lib. iii. cap. xlix. p. 310.

clearly proves that the descent then was originally as it is now, and the coated adobe at H indicates the same fact in regard to Z¹. But the central cone has suffered a considerable change. In the first place it was reduced in height, as Rojas tells us, by the conversion of its conical summit into a level plateau; secondly, the earthquake of 1864, shook down the eastern end of the plateau itself, together with the rear portion of the church. The west side remained undisturbed on account of the solid masonry, and principally because the declivity was not so steep.

I have therefore ventured to suggest a restoration of the mound, as exhibited on Plate XIII. Figs. 4 and 5. It will be seen that, contrary to Rojas, I have retained the two depressions X and Y. This has been done, not because I am convinced that they really existed to the extent and depth they now have, but in order to avoid restoration. I readily admit that they may have been largely deepened in course of time. But what I believe is, that the platforms Z¹ and Z² were originally higher than the one in the west, just as they appear to be at the present time; and thus we find, counting in the central cone, the four levels or plateaux which the coat of arms of Cholula indicates. It is not unlikely that Humboldt in his restoration of the mound may have been guided somewhat by that picture, which he knew, as well as by the statements of Boturini.¹

Taking now the perimeter of the whole structure as restored, it gives us 2,360 metres (7,740 feet), or nearly one and a half English miles. This, reckoning the difference between Castilian and English feet, and in view of the fact that Rojas only included the outside fragments of the mound visible

¹ Compare *Vues des Cordillères*, etc., Plate III. or VIII. of the edition in folio. He mentions Boturini's name for the mound, and in *Essai Politique*, p. 150, repeats the statement of the "quatre assises."

above the surface, still agrees very well with his figures of 2,400 "ordinary paces," while his altitude of eighty ells (*varas*) equal to 67.2 metres (220 feet), if we take into account the decrease in height indicated by himself,¹ comes very near to the one found by me on the north side. There is to me a very pleasing coincidence in these two results, obtained at an interval of just three centuries from each other.

But there are questions to be considered of much more weight, and far greater difficulty of solution, than that of the original form of the mound of Cholula. These are, How and for what purpose was it built? and, Who were its builders?

The materials of which the mound is constructed are earth, broken limestone, little pebbles, and occasional particles of lava. The earth is in the shape of adobe bricks, and is also used as binding material in which the bricks are imbedded. These were probably, or at least possibly, formed in moulds, but there is no trace of grass, or of the ashes and charcoal with which the Indians of New Mexico mixed their adobe.² The bricks are sun-dried, not burnt. Limestone broken into slabs was used for steps and stairways, and pulverized carbonate of lime, mixed with pebbles and lava fragments, for the intervening ledges and the coating of stairways.

The soil of the plain of Cholula is, in many places, very proper for the manufacture of adobe bricks, without any admixture. The particles of lava and the pebbles resemble the sand which is met with all over the plain, in the beds of rivulets, and in exposed cuts. The limestone is found to the east

¹ Humboldt, *Essai Politique*, p. 151, states the surface of the top-platform to be 4,200 square metres. It has since been greatly reduced in size by the earthquake before referred to.

² Pedro de Castañeda de Nagera, *Relacion du Voyage de Cibola*, translation by Ternaux-Compans, 1838, ii. cap. iv. pp. 168, 169, and my *Visit to the Aboriginal Ruins, etc. of the Rio Pecos*, p. 57, note 1.

of Cholula, not to the west. Thus it appears that the material of which the mound was built was principally gathered on the plain about it, and the rest was brought from a short distance, in the direction of Puebla. This disposes of the stories, that the adobe was made at the foot of the volcanoes, about San Nicolás de los Ranches, or even on the other side, in the territory of Chalco.¹

The bricks are laid in courses, or rather in columns breaking joints, which rest on the ledges, all of which are horizontal; I have not seen a single vertical seam. They are of unequal dimensions in the different portions of the structure, so that no two sections show only one size, except the central mound. This indicates that the building was not erected at one time, but is rather an accumulation of successive periods, the central part being the last one made. The ledges therefore were probably coatings put on for solidity, and in some cases they may also denote a particular epoch of construction.

Some portions of the adobe show alkaline efflorescence, while others do not. This leads to the inference that it was gathered from various localities and directions.

From these various considerations, we are led to infer that the great mound of Cholula was not originally constructed upon the plan which it now appears to have, but that it grew in the course of time according to necessity. This would account for its enormous size, without resorting to the supposition of extravagant numbers of population; and would tend to show also, that, while it was the product of communal labor, it was built for some purpose of public utility, and not to benefit private interests, or as a token of respect for the memory of individuals.

¹ The story about Chalco is told in *Spiegazione delle Tavole*, etc., vol. v. of Kingsborough. That about San Nicolás I heard at Cholula. It would be hard to find near the volcano sufficient adobe for the purpose.

There is no evidence that at the time of the Conquest any part of the hill was used except the summit. On the contrary, Motolinía states that, within ten years of the first arrival of Cortés, it was abandoned and overgrown.¹ This is further supported by the fact, that none of the conquerors mentions the great mound; presumably because they all supposed it to be a natural eminence, as nearly every one is inclined to do now at first sight, and because the mound of Quetzalcohuatl, which stood below, on the spot where the convent now is, attracted their attention. The summit only was occupied, and on it stood a "small old temple" dedicated to the idol of Rain. Probably this temple was a Nahuatl erection; at all events, the worship there maintained was a cult of the Nahuatl of Cholula. The custom of erecting small houses of worship on high places was often followed in Mexico, and there are traditions of it still remaining. If the Nahuatl built this chapel, it must have been as much on account of the remarkable size and height of the mound, and of its isolated position, as on account of some former tradition of worship lingering about the place. They used the top, but neglected and abandoned the slopes.

There was not even then any distinct tradition in regard to the purpose for which the mound had been built. Motolinía intimates that it was begun with a view of raising it as high as the snow-clad volcanoes opposite, but that its completion was prevented by a terrible tempest, accompanied by the fall of a huge stone shaped like a toad, upon which the work ceased.² Fray Pedro de los Rios, who in 1566 examined the Mexican paintings then in the Vatican, speaks of a tradition which attributed the fabric to giants, one of whom he called Xelhua, who built the mound in order to escape from the

¹ *Historia*, etc., Trat. i. cap. xiii. p. 66.

² *Ibid.*, pp. 65, 66.

flood.¹ Durán relates that he had heard that the Cholutecans attributed the work to giants, thus assimilating the story to the Biblical narrative of the tower of Babel.² Ixtlilxochitl refers to it in the same manner, and states that, after the destruction of the mound by a hurricane, a temple was erected on its ruins to Quetzalcohuatl, the catastrophe having been caused by that element whose worship he represented.³ Torquemada simply affirms that it remained unfinished,⁴ thus copying Mendieta,⁵ who in his turn, like Fray Hierónimo Roman,⁶ adopted the statement of Motolinía.

It is singular that the story of its having been made as a place of refuge, sometimes in connection with giants, is handed down in various forms through the authors Enrico Martinez,⁷ Vetancurt,⁸ and Boturini,⁹ to Veytia.¹⁰ After him, Clavigero, in the year 1780, positively asserted that the mound was to have been a monument in honor of Quetzalcohuatl,¹¹ and since his time various suggestions have been made as to the purpose of the monument.

¹ *Spiegazione della Tavole*, etc., Kingsborough, vol. v. pp. 165, 172.

² *Hist. de los Yndias*, etc., vol. i. cap. i. pp. 6, 7.

³ *Hist. de los Chichimecos*, cap. i. p. 206.

⁴ *Monarchia*, etc., lib. iii. cap. xxix. p. 280; lib. xvi. cap. xxviii. p. 203: "Un cerrejon, tan grande, que en trescientos años no lo pudieron edificar muchos millares de hombres."

⁵ *Hist. Ecclesiástica*, lib. iii. cap. xlix. p. 309.

⁶ *Las Repúblicas del Mundo*, 1575, Segunda Parte, lib. i. cap. iv. p. 360.

⁷ *Reportorio de los Tiempos y Historia Natural desta Nueva España*, 1606. He copied Acosta, *Hist. Nat. y Moral*, etc., lib. vii. cap. iii. pp. 457-459, but only mentions the giants, without giving to them any connection with the mound.

⁸ *Teatro Mexicano*, Parte ii. cap. i. pp. 205, 206. *Crónica de la Provincia*, etc., p. 171. This author also mentions the giants, and speaks of the Mound as a "torre de Babel."

⁹ *Idea*, etc., pp. 103, 104. He attributes the fabric to the "Tultecos," as a refuge from the deluge. Sahagun said the "Tultecos" were giants.

¹⁰ Mariana Veytia y Echeverría, *Historia de México*, 1836, vol. i. cap. ii. p. 18, attributes it to the "Ulmecas," and says it is a reminiscence of the tower of Babel.

¹¹ *Storia del Messico*, lib. i. cap. ii.

There are scarcely any traditions about the mound current in the district of Cholula at the present time, which are not more or less echoes of the older writers. Thus the story about the tower of Babel has been told to me frequently by Indians, with the addition, that the top of it was blown off by a hurricane and carried to the valley of Atlixco, or, according to another version, even to Spain. Many declare that it was a "temple of Quetzalcohuatl, but there is also a tradition that it was a fortification against the Tlaxcaltecos."

The various Indian names by which it is called may perhaps throw some light on the present inquiry. The oldest appears to have been "Tlalchiuhaltepetl." "Tlalchiuani" means a man who works or tills the soil; "altepetl" is a tribe or tribal settlement. This would imply "a settlement whose people till the land," and would appear indeed very significant. But we have also the etymology "Tlalchializtli," worked plot, and "tepetl," hill, which gives it quite a different, much more modern sense.¹ Of the name "Chicon-tepetl," nine hills, I have already spoken; and still another designation, "Tenantzin de los Remedios," our mother of the remedies, is obviously subsequent to the Conquest. The name Quetzalcohuatl is an evident echo of the older writings.

As there is no tradition which does not contain some grain of truth, this will manifest itself in that in which the most contradictory statements agree. In the present instance we have the great majority of statements in favor of the assumption that the mound was a place of refuge, and two which make of it a fortification.² According to the ideas of Indian warfare, these terms are identical.³ But there is also the fact,

¹ The first etymology is supported by Rojas, *monte hecho á mano*." For both compare Molina, *Vocabulario*, ii. fol. 4, 102, 123. It is also written "Tlachinaltepetl," which gives a very similar definition.

² The most explicit one is that of Sahagun, *Historia*, etc., Introd. p. xvi. It is indeed very striking and positive.

³ *Art of War and Mode of Warfare*, etc, pp. 143 to 146.

that the top was used as a place of worship, which is substantiated by archæological discoveries.

I have already alluded to the singularly favorable position of the mound for a "lookout," — a post of observation. Furthermore, it stands in the midst of land very fertile and exceedingly well adapted for the maintenance of a sedentary Indian population, but still by nature almost entirely defenceless. The Cerro de Tzapotecas, opposite, is the nearest hill which could have afforded shelter to a threatened population. This hill shows traces of an old aboriginal settlement, of which I shall hereafter speak. But it is remarkable how closely the profile of the great mound, as restored (Plate XIII. Fig. 4), agrees with that of the Tzapotecas (Fig. 8), or that of the Teoton (Fig. 6) and the Tetlyollotl (Fig. 7), two hills lying in front of the great volcano. It almost seems as if the builders of the mound had copied the outlines of these hills. The whole area of the mound, as restored, covers a surface of 256,000 square metres (2,624,000 square feet, or nearly 60 acres) at least. Of this, the central or upper mound occupied only 16,000 square metres, leaving the remainder of 240,000, or fifteen sixteenths of the whole expanse, for the lower platforms and the projecting horizontal aprons. The disproportion between the two suggests the query, Which was built for the other? That walls of adobe should have been built around a vast court surrounding an edifice of the kind called a "mound of worship" is plausible; but that enormous earth-works, amounting in bulk to many times the volume of the former, should have been raised for the sole purpose of supporting and ornamenting it, is scarcely probable. There must have been another, more practical object.

The central hill I have designated as a former mound of worship. Its size and shape, as well as tradition and the statements of eye-witnesses, agree in confirming this view. If we regard it then as such, it stands in reference to the

other parts of the structure as the centre of a settlement on the level ground.¹ If we imagine the plateaux and aprons around it covered with houses,² possibly of large size like those of Uxmal and Palenqué, or on a scale intermediate between them and the communal dwellings of Pecos and many other places in New Mexico, we have then on the mound of Cholula, as it originally was, room for a large aboriginal population. The structure accordingly presents itself as the base of an artificially elevated, and therefore, according to Indian military art, a fortified pueblo.

Who were its builders? One thing seems certain; namely, that the Nahuatl did not construct it. Prior to them, the Toltecs on one side, and the Olmecs on the other, lay claim to it, leaving out of view the race of "giants," whom Sahagun identifies with the Toltecs, and Veytia with the Olmecs. I have already alluded to some points which tend to suggest that the Toltecs were Maya; and I owe to the friendship of an eminent co-laborer, Dr. Valentini, the further hint, that even the words "Quiname," "Ixcuiname," used to designate these giants, may be merely corruptions of the Maya language. It is also asserted by the Father de los Rios, that in his time the inhabitants of Cholula still had an old song with words which they did not understand. If these words are correctly reported, they sound like corrupted Maya, and the surmise that the Maya and Toltecs were of the same stock gains plausibility.³

Whether Olmecs or Toltecs were the builders of the mound,

¹ Compare the beautiful description, by Motolinía, *Historia*, etc., Trat. i. cap. xii. p. 63, translated in *Art of War*, etc., p. 104.

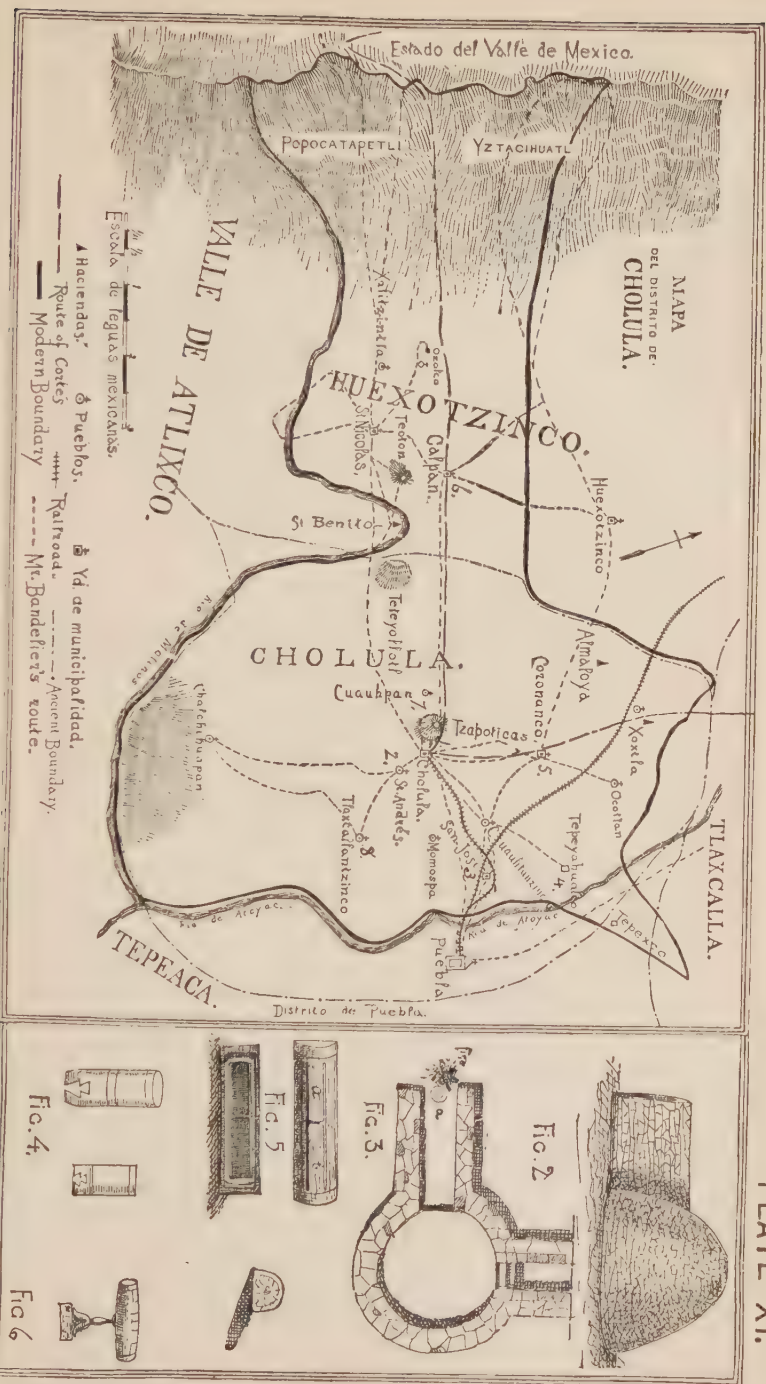
² May not the "square house" described by Humboldt, *Vues des Cordillères*, vol. i. p. 108, be perhaps evidence of this?

³ These words are given "Tulanianhululaez" in *Spiegazione*, etc., Kingsborough, vol. v. p. 166. Brasseur de Bourbourg, *Popol Vuh*, Introd. p. lxxxii., separates it into three words, "Tulan yan hululaez." This suggestion is also due to Dr. Valentini.

tradition is almost unanimous in stating that it was destroyed. As this cannot be taken in a literal sense, the tale of its destruction, or at least abandonment, is so strongly affirmed, that we must suppose something of the sort really happened, not to the hill itself, but to the buildings standing upon it, which were possibly a pueblo, as I have suggested. Indians never rebuild on ruins, or repair them ; so the successors of the mound-builders of Cholula settled on the plain below, and the place of worship of Quetzalcohuatl, his "medicine lodge" of adobe or stone, was again erected in the new pueblo. The summit of the deserted hill became the seat of another cult, that of Rain, practised in sight of the volcanoes from which Quetzalcohuatl was supposed to carry the beneficial moisture over the parched and arid plain. That the ruin of the mound pueblo of Cholula may possibly have been brought about by the Nahuatl, I have already stated. They were not altogether unprepared for a worship of Quetzalcohuatl, and easily adopted him for their tutelary god, changing, however, the place of his shrine, for the reasons already assigned.

Turning now to other remains of mounds of artificial origin, outside of the city, it will be observed that they are found in seven places, all marked on the map of the district (Pl. XI. Fig. 1). One of these spots, Tlaxcallantzinco (No. 8), has but very faint vestiges left, and I had no time for a close examination ; neither would it have been advisable to attempt it, under the irritated and suspicious state of the Indian mind at the time. Neither could I even visit the mounds of Cuauhpan (No. 7). Although I regret this failure, I could not avoid its happening ; but at least I made sure of the fact of their existence. All the remaining points I investigated more or less, and have reached the conclusion that they represent two types of construction ; namely, mounds built on the level ground, without projecting platforms, and

PLATE XI.



platform mounds, resembling in form the great hill of Cholula itself.

The first class includes Nos. 2 and 6; the latter, Nos. 3, 4, and 5.

No. 2. San Andrés Cholula, about $1\frac{1}{2}$ kilometres (1 mile) southeast of the great structure, is the base of a very extensive adobe structure, apparently without intervening ledges, at no place higher than about 2 metres ($6\frac{1}{2}$ feet). In surface extent it is rather larger than the Cerro de la Cruz. San Andrés was, as already stated, formerly a "barrio," or quarter of the pueblo of Cholula, and the mound therefore stood in the midst of an Indian settlement at the time of the Conquest, and it is in all likelihood later than the great one.

No. 6. San Andrés Calpan. This pueblo existed at the time of the Conquest, and long previous to it. The conquerors call it "Izcalpan." It was regarded as affiliated with the tribe of Huexotzinco, and was constantly at war with Quauhquechollan, Cholula, and the valley confederates.¹ The present pueblo, with its monastery, lies west and south of a high hill, called Tepeticpac, or Tepetipac,² a long ridge, now

¹ The word "Calpan" signifies place of houses; "Izcalpan," place of many houses. In what exact relations it stood to the pueblo of Huexotzinco, it is not possible for me to tell. It was probably confederated, and had an autonomous existence. The *Anales de Cuauhtitlan* frequently mention it. Durán, *Historia*, etc., vol. ii. cap. lxxxi. p. 93, says that, at a certain festival of Huitzilopochtli, the victims for sacrifice had to be from "Calpa" also. The name "Izcalpan" is given by Bernal Diez, *Hist. Verdadera*, cap. lxxxvi. p. 80. "E asi caminando, llegamos aquel día á unos ranchos que estan en una cumbre de sierra, que es poblacion de Guaxocingo, que me parece que dicen los ranchos de Izcalpan, quatro leguas de Cholula." The distance and description are very correct. Subsequently, Calpan formed an independent municipality, and the Archivo General at Mexico has a number of documents concerning its quarrels with Huexotzinco about timber and water.

² The convent of San Andrés Calpan is a splendid structure, but it is now abandoned, sacked, and decaying. It was in existence as early as 1571. Tepeticpac may be, and probably is, Tepetipac, "cumbre de sierra," crest of a ridge. Molina, *Vocabulario*, ii. fol. 102. This agrees very well with the character of the place.

cultivated, sloping to the southwest, and descending abruptly to the barranca of Atiopan in the north, and less steeply to another gorge in the south. The whole hill, from which a magnificent view is had over the eastern plain to the volcano of Orizaba, is covered with fragments of pottery, and obsidian, whorls, metates, and metlapiles of the old form, and stone heads and whole figures resembling the "Indio triste" are also exhumed from it. According to current tradition the aboriginal pueblo stood on this site,¹ and its Tianquiz, or market-place, occupied until 200 years ago the space immediately east of the convent. On the summit of the hill are low remains of a mound of worship, made of adobe. It measures 40×25 metres (131×82 feet), and is at its eastern front 3 metres (10 feet) high. West of it 110 metres (360 feet) is another round knoll, 30 metres (100 feet) in diameter, and only 1 metre (3 feet) high. The pueblo was well situated for defence, as well as for the habitation of sedentary Indians. The ridge is high and very commanding: on the north the barranca affords a constant supply of clear running water, while the valley on the other sides is fertile and well irrigated.

The mounds of the second class are located at Nos. 3, 4, and 5.

No. 3 stands near the Rio Atoyac, and the tramway from Puebla to Cholula, after crossing the Puente de México, describes a sharp curve around its northern base. On the summit of the natural swell on which it stands is a platform of adobe earth nearly square, much disturbed, and at places scarcely discernible. This platform occupies an area of about 40,000 square metres (500,000 square feet, or about 12 acres). It is divided from east to west into two equal portions, of which one is slightly higher than the other. It supports a mound whose base has a diameter of

¹ This is corroborated by the quotation from Bernal Diez.

about 100 metres (328 feet), with a height varying between 10 metres (33 feet) on the southeast, and 14 metres (46 feet) on the northwest. The western platform has besides another inconsiderable swelling. The whole is undoubtedly artificial, and it is covered with fragments of pottery and obsidian, with metlapiles and arrowheads. Many of these objects have been washed farther down the eastern slope, where the cultivable soil is eroded, and lie now on the "tepetlatl," or indurated clay, which forms the base of the hill. The mound has a circular upper platform, 9 metres (30 feet) in diameter, in which is a depression made by former treasure-hunters. This hole was dug on the strength of a belief, that from the mound a subterraneous gallery conducted to a great distance, where treasures lay deposited. When I explored the locality, on the 11th of May, 1881, I found in the hole marks of a recent fire, and gum-copal partly consumed, showing that superstitious rites had recently been performed there by the Indians. The mound itself shows blocks of "tepetlatl" with adobe, and fragments of white calcareous ledges, but no regular adobe was visible, owing to its condition of cultivation.

On the western declivity stand the ruined buildings of the former Rancho de San José. They are partly built of "tepetlatl," and are completely abandoned at this day. I could not obtain access to the titles to the land, but there is no mention of San José del Rancho Viejo, as the place is called, in the General Archives up to 1641. The Indians have no name for the place in the Nahuatl idiom, and it appears to be a ruin, abandoned, and forgotten even, at the time of the Conquest.

No. 4. About 4 kilometres ($2\frac{1}{2}$ miles) north-northeast of Cuauhtlantzinco, in the cultivated plain between it and San Lorenzo Olmecatlan, rise the ruined mounds of San Juan Tepeyahualco. I did not measure them, rain compelling me

to return. But I satisfied myself that, while the size of the largest mound is about equal to that of the Rancho Viejo, they are artificial, and of adobe with strong alkaline efflorescence. There are at least three knolls, the largest one on the west side, while the two eastern ones appear like successive stages of it. No tradition lingers about the place, although the walls of a large hacienda, now ruined and overgrown with opuntia, stand at the foot of the structure.

No. 5. The "Lomítas de Coronanco." The main road from Cuauhtlantzinco to Santa María Coronanco, at about 4 kilometres ($2\frac{1}{2}$ miles) from the former, and 1 kilometre ($\frac{2}{3}$ mile) from the latter pueblo, passes between two artificial eminences. These are the "Lomítas" or "Cerritos" of Coronanco. The northern one is 3.4 metres (12 feet) above the wheat-field on which it stands; the latter is 1.7 metres ($5\frac{1}{2}$ feet) higher than the road. The hill is surrounded now by a draining ditch, that gives an irregularly polygonal shape to its base. Its actual perimeter is 134 metres (440 feet). On its southeastern slope, there are crumbled steps, much like those of the great mound of Cholula, and with the same coating. The entire hill is of adobe; also an oblong mound southeast of it, which is lower and more decayed. I measured the adobe bricks and found them $0.52 \times 0.26 \times 0.15$ metre ($21 \times 10 \times 6$ inches), or very nearly the size (*g*) of those of the Cholula hill. Both mounds stand on a rectangular platform, which is very well defined on the south side of the road, measuring there 280.7 metres (920 feet) from east-southeast to west-northwest, and 58.7 metres (192 feet) from south-southwest to north-northeast. The northern section is much obliterated, but I believe I am within bounds in assigning to both an aggregate surface of 30,000 square metres (307,500 square feet, or 7 acres), of which the mounds now occupy about one fifteenth, whereas at San José del Rancho Viejo the propor-

tion is one fifth. The platform is about 0.50 metre (20 inches) above the surrounding fields; it is bounded on the north by a recent trench, which exposes blocks of "tepetlatl" beneath the crumbled adobe. The whole area is covered with pottery, obsidian, and the other usual remains of aboriginal occupation antedating the Conquest.

The proximity of these mounds to the pueblo of Coronanco gives the impression that they belonged to a pueblo which stood there at the time of Cortés. Although there is no doubt of the fact that such a village existed then, it is by no means certain that the mounds belonged to it. The latter appear in their present shape, with a road passing between them, on the map of the grant of Cuauhtlantzinco of 1598, and the Indians of Coronanco have absolutely no recollection or tradition concerning them, beyond the fact that they call the smaller one "Xochiqueyac," or "place of the frog of the flowers." Besides, the village of Coronanco itself is surrounded by other plots, which show numerous and distinct traces of former occupation, and the present inhabitants incline to the belief that these were the places where their pueblo stood in 1519, whereas the "Lomitas" were then already abandoned and forgotten.

Areas which, by the presence of pottery and obsidian, denote the presence of Indian settlements before the Conquest, but which contain no trace of buildings or mounds of any kind, are not unfrequent in the district of Cholula. Besides those already spoken of, where mounds arise, I was able from personal observation to locate eighteen more, including San Benito, which, with four others, belongs to the former range of Calpan, or rather Huexotzinco. Of the thirteen remaining for the range of Cholula proper, only three, the Cerro de Tzapotecas, Santa María Tonantzintla, and Chalchihuapan, are of any extent; the others are very small, and only imply the

presence of perhaps a few houses. Tonantzintla and Chalchi-huapan probably existed at the time of the Conquest, but of the settlement on the hill of Tzapotecas there is no record or recollection whatever. Still it is an extensive area, the whole lower flank of the mountain from the northeast to the southwest being strewn with pottery, obsidian, and corn-grinding implements. It is not more than 4 kilometres ($2\frac{1}{2}$ miles), at farthest, from Cholula, and faces directly the great mound. The original grant to the city does not include it. The remains there appear to belong to a considerable pueblo, which disappeared long before the Conquest.

On that part of Cholultecan territory which has been but recently added to it from the former range of Huexotzinco, on the slopes of the volcanoes, considerable pottery and obsidian are found on areas about whose occupation by man tradition does not speak. These are the western slopes of the Cerro del Teoton and Pozotitlan, south of San Nicolás de los Ranchos, near the road to Atlixco. I have documentary evidence that these places were unoccupied in the sixteenth century, and have remained so ever since.¹ But the slopes of the volcanoes themselves, in some places as high up

¹ The "Pago de San Benito" was, according to tradition, formerly called "Cuauhnepanitla," the interior of, or in the midst of, the deserted woods. Molina, *Vocabulario*, i. fol. 86. There are evident traces, indeed, that the Monte extended east of San Benito. The place was settled about 1606, (*Merced á Catalina Roxas*, vol. xxv. fol. 87,) but a hermitage of San Benito stood there prior to it, — on the summit of the Teoton probably, where the vestiges of it are still visible. The western slopes of that beautiful mountain were inhabited, and also its base. There are vague traditions about it extant, but they are of the same nature as those concerning the great mound, and my conviction is, that the settlement was no longer in existence when Cortés came. This is confirmed by the MS. which I have called *Junta de San Nicolás*.

Pozotitlan lies near San Baltásar. On the map of the Popocatepetl, of 1592, it is vacant, and there is no trace of a pueblo. The space covered by fragments is extensive. The "Monte" itself shows occasional spots which indicate former settlements, too small for pueblos, and suggestive of transient habitation. These spots yield pottery, but very little, if any, obsidian.

as the snow line, yield remains of aboriginal art which deserve some attention here.

In the "Monte," and in the little fields bordering it, statues of lava are occasionally exhumed, which are totally different from those of Cholula, Huexotzinco, and Calpan, or other places in the plains. They are much ruder, the faces are square, the eyes and mouths round, the nose is often indicated by a cavity instead of a protuberance. The limbs are especially diminutive; the arms generally folded on the breast, and forming curves instead of elbows. The largest of these statues I found at San Nicolás. It is a squatting figure, 0.60 metre (24 inches) high, 0.32 metre (13 inches) wide, and 0.16 metre (6½ inches) thick. I do not believe that they are merely unfinished specimens; they are too numerous, and too strictly limited to one geographical section. They appear like the work of a tribe which had disappeared before the time of the Conquest, and one much less proficient in the art of carving stone than were the Nahuatl. The region where these remains are found is the same which, according to Camargo, the Olmeca and Xicalanca traversed, while shifting from south of the Popocatepetl to the territory of Tlaxcala.

To sum up these investigations, we find that, according to tradition, the territory of Cholula was, up to the year 1519, successively occupied by at least three different stocks. The modes of burial, so far as ascertained, reveal an equal number of distinct customs. The architecture, so far as it is possible to investigate it, shows at least two separate types, — the one of the Nahuatl period at the time of Cortés, the other that of their predecessors, the "mound villages," of which the great "Pyramid" of Cholula, and the artificial hills of San José del Rancho Viejo, San Juan Tepeyahualco, and Coronanco, seem to be representative specimens. Finally, we may ask if the facts, that the adobe bricks of the great mound

contain pottery and obsidian, and that skulls have been found beneath its projecting western apron, do not hint at a still older population, with perhaps a different style of architecture. These suggestions are thrown out merely as queries, or objective points for further critical investigations. If such investigations should prove the erroneousness of my surmises, substituting for them, however, the absolute historical truth, I should be overjoyed, and regard it as the only benefit derived from my "Studies about Cholula."

PART IV.

AN EXCURSION TO MITLA.

BY the first day of June, 1881, I had so far concluded my survey of Cholula as to make it desirable to compare the results with aboriginal remains elsewhere. This appeared particularly indispensable so far as concerned house architecture, — of which the few vestiges to be found in Cholula did not, alone, warrant any plausible inferences. I was repeatedly told, that the neighboring State of Tlaxcala contained remains of the kind I looked for; but I had already travelled so many weary miles in vain, upon the strength of similar assurances, that, while not doubting the fact of the existence of such ruins, I still questioned, perhaps wrongly, their importance, and I decided therefore upon visiting localities where ancient buildings were known to be in a fair state of preservation. To visit Teotihuacan, or Tula, both of which M. Charnay had so diligently investigated, would have been to a certain extent useless, and certainly unbecoming, while Mitla, in the State of Oaxaca, though far to the south, seemed to afford the material which I desired. Besides, in his relation of the flight of Quetzalcohuatl, Sahagun makes the singular remark that, after leaving Tecamachalco, Quetzalcohuatl “made and built some houses underground, which are called mientlancalco.”¹

¹ *Historia General*, etc., lib. iii. cap. xiv. p. 258. Such misprints are very common in Bustamante's edition; they result from imperfect copying of the original, as I have satisfied myself, having consulted Bustamante's manuscript.

It is easy to recognize here a misprint for Mictlancalco, and the subterranean buildings agree very well with the architecture of Mitla, or Mictlan.

I left Puebla on the 9th of June, reaching Esperanza early the following morning, and Tehuacan (in the southeastern corner of the State of Puebla) at four P. M. The rapid descent from Esperanza carries one, in six hours, from the chilly plateaux, through the arid Cañada; 1,300 metres (4,300 feet) lower into the broad valley, where tropical fruits, occasional palm trees, and an astonishing variety of cactuses grow and blossom in patches. Tehuacan, now a pleasant town of 9,172 inhabitants,¹ was formerly the seat of an important Nahuatl tribe, represented as very warlike. It is not quite certain whether they were tributary to the valley confederates or not. The proper name was Teohuacan,² — channel or gorge of God. Previous to 1541 a Franciscan convent had been already established there, which enjoyed great reputation in early times.³ There are remains of great antiquity on the mountain slopes around the present city; but I had no time to investigate them, and set out for Oaxaca on the 11th of June on horseback, reaching the capital of that State on the 16th, at noon, after a tiresome and difficult ride. While it is very hot at Tehuacan, it is fiercely so in the narrow valleys, and we were thankful to reach Don Dominguillo on the evening

¹ Busto, *Estadística*, etc., i. p. li.; the whole district has 51,221. In 1746, it had 2,080 families of Indians, with nine pueblos. Villa-Señor y Sanchez, *Theatro Americano*, vol. i. lib. ii. cap. xxiv. pp. 350, 351. In 1571, 3,000 souls, with the sujetos, about 20 aldeas. *Relacion Particular*, etc., p. 28, MS.

² Mendieta, *Hist. Ecclesiástica*, lib. ii. cap. xxvi. p. 130, writes also "Teoacan"; cap. xxxiii. p. 145, "Teohacan"; Gómara, *Seg. Parte*, etc., pp. 432, 449, "Teouacan." The word is derived from "Teotl," God, and "Uacalli," channel, and is appropriate if we take into consideration that the people of the place were supposed to offer an unusual number of sacrifices. Motolinía, *Historia*, etc., Trat. ii. cap. v. p. 117; Torquemada, *Monarchía*, etc., lib. xx. cap. xliii. p. 481; and others.

³ Motolinía, *Historia*, Epist. Proemial, p. 13, etc.

of the 14th, — the lowest point of the route, and at the foot of the high pass of Saloméa. The soil is dark red in many places, and also deep sand for long and weary miles, while the whole vegetation appears to consist of dangerous thorns. Still the Indians raise two crops of corn annually. Throughout the entire region the dwellings of the aborigines, with a few exceptions in the villages, are made of canes or poles, sometimes covered with palm leaves, or with the narrow, pointed blades of the Maguey de las Casas; between Tehuacan and the Cañada Grande, I have seen entire huts, square, and steep-roofed, made of leaves of the largest agave. The roots are generally of a high pitch, and sloping on all four sides. Posts, sometimes stripped of their bark, and with natural bifurcations at the upper end, form the corners. I have also seen walls where the interstices were filled with clay; but walls of adobe are not common. Not a nail enters into the whole construction, as everything is fastened by a strip of maguey.

As in the State of Puebla, the Indian here occupies three buildings; or, if there are only one or two, they still are so divided as to indicate three distinct sections, corresponding respectively to the sala, here used as a dormitory, the kitchen, and the store-room. Ethnographically, this region is an important one. The Nahuatl language prevails until beyond San Antonio Nanahuatipac, on the boundaries of the State of Oaxaca. Thence on to the south the Mazateco begins,¹ and the road passes not far from where the Cuicateco also makes its appearance.² Beyond Dominguillo, and near the summit

¹ Orozco y Berra, *Geografía*, etc., p. 197, says the Nahuatl is spoken there; but I am sure that the original idiom is Mazateco. It was used in my presence at San Juan de los Cues. According to Villa-Señor, *Theatro*, etc., vol. i. p. 139, Tecomavaca contained, in 1746, twenty-two families of Mazatecos.

² I have not heard this language myself, but know that it is spoken in Cuicatlan, and near Dominguillo. Orozco, *Geografía*, etc., p. 188. Murguía, *Estadística*, etc., pp. 222–225.

of the pass of Saloméa, we touch upon the Chinanteco.¹ All these idioms are but little known and have been scarcely studied. At the entrance of the valley of Oaxaca the first pueblos are Mixteco ;² thence toward the south and south-east as far as Mitla, the Tzapoteco prevails. A knowledge of the Nahuatl is of little or no avail. It is a region which I cannot too earnestly commend to the attention of future students.

Aboriginal ruins are scattered over it at intervals. I have heard of important ones at Cuzcatlan, where a number of valuable relics were exhumed about thirty years ago, — a place whose foundation is also attributed to Quetzalcohuatl.³ I found there among the Indians the singular tradition, that the buildings of Sansuanch — as the ruins are called east of the Venta Salada, at the foot of the Sierra de Zongolica — had been the former home of Montezuma, from which he had started to conquer Mexico. The parallelism with similar traditions among the pueblo Indians of New Mexico, far to the north, is indeed remarkable.

The pueblo of San Juan de los Cues, in the State of Oaxaca, derives its name from the mounds of worship, whose ruined heaps arise on the bluffs encircling this beautiful spot, where all the exuberance of tropical vegetation seems to be crowded together in the midst of a dismal valley overgrown with the spectral *Candelaber cereus*. It was an excellent site for an

¹ Murguía, *Estadística*, etc., p. 222. Orozco, *Geografía*, etc., p. 187.

² Here I endeavored to secure some of the terms of relationship; but it was tedious work, and I got only a few: —

My father, Dũ-tũi; *thy father*, Dũ-tũng.

My mother, Dĩ-ti; *thy mother*, Dĩ-ũng.

Grandparents, Huela; Huelũi.

Father's brother, as well as *mother's brother*, Dĩ-to.

Brother, Nyani; *sister*, Cua.

I tried to explain the Gentile system, but they could not understand it.

³ *Historia de los Mexicanos por sus Pinturas*, cap. viii. p. 91.

Indian village, as the bluffs afforded perfect defences for a pueblo, and there is water close at hand; while the grove beneath abounds with fruit. I saw some of the old pottery picked up among the ruins, and found it totally different from the kind that occurs at Cholula,—of a light ashy gray, not painted, very thick, and closely resembling that of Mitla. Here the Mazateco language is spoken.

Tecomavaca, about 12 kilometres (8 miles) farther south, is in the vicinity of important ruins. The village itself, among whose people the Mazateco has already become almost dis-used, lies on a sandy expanse, fearfully hot. The valley is narrow, but the rocky hills bordering the mountain slopes bear the remains of three settlements, the nearest of which lies $1\frac{1}{2}$ kilometres (1 mile) and the farthest 12 kilometres (8 miles) from the place. Some of the buildings are said to be in a perfect state. The *pedra del reloj*, now at the Institute of Oaxaca, and a large carved block, also preserved there, representing a puma, are said to have been found here.

I have been informed of the existence of at least three more ruined pueblos between Tecomavaca and Dominguillo, all situated on high bluffs bordering the picturesque mountains which frown down upon the hot and narrow valley.

It is singular that, while the Nahuatl language is useless in these places, the local names are all in that idiom. This territory was, at one time, invaded by the Mexicans and their confederates, and the latter thereafter gave their own appellatives to the places,¹ communicating them to the Spaniards, through

¹ In regard to Tecomavaca, the following story is told by Herrera, *Hist. General de los Hechos de los Castellanos*, etc., Dec. iii. lib. iii. cap. xv. p. 101: "En el pueblo de Tecomauaca, que está en el Camino Real de Guaxaca á Mexico, iendo Moteçuma á dár batalla á los Indios en Zapotitlan, i pensandole, que se llevase en su exercito mas cuidado del regalo, i de lo que se avia de comer, que de las armas, con que avian de pelear, mandó quebrar todas las xicaras, i Tecomagues, que son vasijas, de aqui quedó este nombre de Tecomauaca."

whom they became permanent. It is certain that they bore these names in the sixteenth century. In 1670 there were parishes established in most of these pueblos, the Dominican order having charge of spiritual affairs here.¹

Beyond Dominguillo begins the ascent to the pass of Saloméa, one of the wildest and grandest in Mexico. While the road winding up to its summit recalls, in solidity and width, those which traverse the Alpine passes of Switzerland, the landscape is marked by more appalling grandeur and extent of view. But fan-palms and madroñas alone cover the slopes, through which deer, pumas, and even the jaguar, still roam. Higher up oak trees begin to appear, and beyond the hamlet of Saloméa, near the Cumbre, we enjoy the singular spectacle of a forest of oaks, palms and madroñas. The Maguey de Mezcal grows at their feet, in large heads, like cabbages. This wilderness—interposed like a barrier between the valley of Oaxaca and the descent from Tehuacan—almost reminds one of the Mictlan-Cuahtla mentioned by Tezozomoc.² About one hour's ride beyond the Cumbre, the valley of Oaxaca spreads out at our feet like another world, the dark mountains of the Mixteca rising directly west of us. The valley is reached near San Francisco Huitzo, and along the borders of the Rio Atoyac there are in succession three pueblos, called by the name of Huitzo, — San Francisco, San Pablo, and Santiago. The word is Tzapoteco, and said to signify a lookout or post of military observation on the frontier.³ Above San Pablo Huitzo ruined mounds crown the Mitla, or Mictlan, is also Nahuatl, and Torquemada, *Monarchia*, etc., lib. ii. cap. lxxvi. p. 211, states that it was invaded by the Mexicans.

¹ Fray Balthazar de Medina, *Crónica de la Santa Provincia de San Diego de México*, etc., 1682, fol. 228.

² *Crónica Mexicana*, cap. xxxvii. pp. 354, 355. There is another Mictlan-Cuahtla in the State of Vera Cruz.

³ Burgoa, *Geográfica Descripción de la Parte Septentrional del Polo Arctico de la America*, vol. ii. cap. xli. fol. 204, "Huijazoo," atalaya de guerra.

summit of a bare hill, and it looks as if there had been here a frontier village whose elevated position and excellent opportunities for defence justify that name. The Tzapotecos claimed the spot, and are said to have withstood there the incursions of the Mexicans.¹ But the part of the Mixteca extending north of Huitzo was independent of the Mexicans, and at war with the Tzapotecos. The settlement in question, therefore, served against the Mixtecos as well as against the confederates. Following the course of the Rio Atoyac, we strike soon the broad and pleasant valley of Oaxaca proper. The mountains in the west are lower and barren; in the east, the Sierra Juarez is picturesque and wooded. Vegetation in the valley itself is rich, but there are no palms. In their place, the colossal Ricinus, the Papaya, and hedges of dark green Tzompantli, so high as to shade the road, are the most conspicuous plants. Villages are numerous along the bottom land as well as the eastern mountain slopes. San Pedro Etla, with an imposing system of artificial mounds, ten in number, looms up conspicuously. They seem to rise on a vast platform, like the great mound of Cholula. Etla, whose aboriginal name was Lyó-vanna, or Loa-vanna (signifying "place of subsistence," according to Burgoa²), lies at the outlet of another passage from Tehuacan to Oaxaca, which is nearly one day's journey shorter than the route across Saloméa. Etla was formerly an important pueblo of Tzapotecos. Opposite to it, on the west bank of the Atoyac, near San Isidro, three pyramidal mounds arise on the Hacienda de Aleman. As far as I could examine one of them, it consists of earth and loose stones, with calcareous ledges 0.35 metre (14 inches) apart, and 0.10 metre (4 inches) thick.

¹ Burgoa, *Geogr. Descripcion*, etc., vol. ii. fol. 205, 206; also Murguía, *Estadística*, etc., pp. 175-177.

² *Geográfica Descripcion*, vol. ii. cap. xl. fol. 199, "lugar de mantenimiento."

These artificial elevations appear to rest immediately upon the surface, and recall, by their forms if not by their size, the pyramids of Teotihuacan. Northwest of the city of Oaxaca, on the most northerly spur of the Espinazo, the extensive ruins of Monte-Alban present themselves, like ruined castles. The city of Oaxaca itself lies at the foot of this ridge, between it and the old Fortin. Five valleys converge there, — the Valle de Oaxaca, Valle Grande, Valle Chico, Valle de Etla, and Valle de Tlacolula. These in fact form but three, since Etla belongs to the Oaxaca valley. The Chico and Grande both lie south, so that the city has only three outlets; — one to the north, from which we have just descended; one to the south, towards Ocotlan and Puerto Angel; and one to the southeast, to Tlacolula, and ultimately to Tehuantepec, or Chiapas.

It was the northern valley in part, together with the neighboring one of Cuilapa, which formed the Marquezado, or the grant executed in the month of July, 1529, to Cortés, with the title of Marqués del Valle de Oaxaca.¹ It is interesting to note that this grant conveyed to the great conqueror 23,000 vassals, who at that time were supposed to have composed the population of the region.² If this estimate be true, a great increase of numbers has taken place within the past 360 years, for the proportion of Indians to mestizos and whites is exceedingly large in the State of Oaxaca.³

¹ Herrera, *Hist. General*, etc., Dec. iv. lib. vi. cap. iv. p. 105. Prescott, *Hist. of the Conquest of Mexico*, vol. iii. p. 320, notes 24, 26.

² Herrera, *Hist. General*, etc., vol. ii. p. 105.

³ Herrera, *Descripción*, etc., cap. x. p. 20, says the bishopric of Oaxaca had 150,000 tributary Indians. It also included the southern portion of Vera Cruz. Humboldt, *Essai Politique*, etc., vol. ii. p. 184, gives the population in 1803 as 534,800; José M. García, *Idéas*, etc., in *Boletín de la Soc. Mexicana de Geogr. y Estadística*, p. 119, in 1852, after Almonte, 525,101; in 1857, 525,938; García Cubas, 531,768; Busto, *Estadística*, etc., in 1878, p. xlviii., 733,556. The Marquezado formed only a part of the State.

The city of Oaxaca proper is, like Puebla, of Spanish foundation, the royal Cédula bearing date 25 April, 1532.¹ Its beginnings were so humble, and the first years so full of trouble, that in 1544 it had barely thirty Spanish settlers.² Possibly an aboriginal pueblo stood on the site of the town. Its population in 1881 is about 30,000 souls, and it lies in lat. 17° 10' north, and long. 96° 38' west of Greenwich,³ and at an altitude of about 1,200 metres (3,900 feet) above the sea-level. The climate is therefore pleasant and very equable, though not to be compared with the beautiful skies of Puebla.

The Mexicans called Huaxyacac a region which is generally identified with the present valleys converging at the city; but the inhabitants of these valleys they called "Tzapotecos." Of the signification of the name Huaxyacac, (or Guaxaca, as it was first written by Cortés,⁴) nothing certain is known, and very little even of the Tzapotecos themselves. The latter called their country "Lachea";⁵ but of their own name for the tribe and idiom I have as yet found no trace; and even Dr. Berendt has not been able to classify the language.⁶ Neither do we know anything certain about their beliefs, or traditions in relation to their origin. Torquemada has a story, according to which they were refugees from Cholula.⁷ Unfortunately we lack reports upon the Tzapotecos of the early times of the Conquest, except so far as relates to their contests with the Mexicans. The latter, or rather

¹ Murguía, *Estadística*, etc., p. 161.

² Juan de Zárate, *Lettre à Philippe II.*, in Ternaux-Compans, "Recueil de Pièces," etc., p. 297. In 1610 its population was 400. Herrera, *Description*, p. 19.

³ García, *Idéas*, etc., p. 118, after García Cubas.

⁴ *Carta Cuarta*, pp. 97, 109, etc.

⁵ Orozco y Berra, *Geografía de Lenguas*, etc., p. 29.

⁶ *Die Indianer des Isthmus von Tehuantepec*, in "Zeitschrift für Ethnologie," vol. v., Verhandlungen, p. 152.

⁷ *Monarchía*, etc., lib. iii. cap. vii. p. 256.

the confederates of the valley of Mexico, made incursions into the territory of the Tzapotecos from the direction of Tehuacan, and, making a detour around the pass of Saloméa, threatened them from the east and southeast, where they had devastated Tehuantepec. How far they penetrated towards the site of the present city is not known; but after the Tzapotecos had withstood the main onslaught from that side, the Mixtecos attacked them from the other, and it was only the opportune arrival of the Spaniards in 1522 which prevented their destruction.¹ Little is known of the social organization of the people constituting this linguistic stock. Their chief pueblo is said to have been Zachila, or Teotzapotitlan, — a short distance south of Oaxaca;² but equally important ruins are scattered over the whole area. Besides Etlá (Lyó-vanna), I would mention Teotitlan del Valle (called in Tzapoteco “the foot of the timber or mountain”), San Juan Teticpac (Zéto-baa),³ Tlacolula (Qui-y-baa), and Mitla (Lyó-baa). The Tzapotecos offered human sacrifices; and their mode of worship and rites appear to have been in general analogous to those of the Mexicans, as were also their dress, ornaments, and weapons, and their warlike organization. Herrera says that they went to war by barrios, or quarters, which are the same as the localized gentes, kins, or calpulli of the Nahuatl.⁴ It has been ascertained that they had the

¹ The main authority for these tales is, of course, Burgoa, *Geogr. Descripción*, etc.; also, Agustín de Salazar, *Relación de Chilapa*, MS.; and Pedro de Ledesma, *Relación de Oaxaca*, MS.

² Burgoa, *Geográfica Descripción*, etc., vol. ii. cap. xlviii. fol. 230; cap. liii. p. 259, etc. Murguía, *Estadística*, etc., pp. 166, 167.

³ Burgoa, *Geogr. Descripción*, etc., vol. ii. cap. xlviii. fol. 230: “Zecto-ba que quiere decir otro sepulcro, ó lugar de entierro á distinción del entierro general que tenían los Reyes Zapotecos en el pueblo de Mitla, que se llamo Yooba.”

⁴ *Historia General*, etc., Dec. iii. lib. iii. cap. xiv. and xv. pp. 100-102. Also on the Mixtecos, cap. xii. and xiii. pp. 97-99.

same computation of time, dividing the year into eighteen months of twenty days each ; their great cycle was also composed of fifty-two years, with thirteen divisions of four years each.¹ In fact, the Tzapotecos appear to have been a sedentary Indian stock, forming one tribe, or perhaps a confederacy of tribes, living by horticulture, the chase, and warfare, and having customs, arts, and institutions similar to those of the Nahuatl. Of their architecture I shall speak hereafter.

I have seen several examples of their pottery, and stone carving. At present, a very handsome glazed pottery, almost emerald green, is made about Oaxaca ; but the old pottery was invariably similar to that at San Juan de los Cues, — light gray, thick, and without traces of paint. Its ornamentation is much more overloaded, grotesque, and elaborate than that of Cholula, and the faces often have noses exactly like the so-called “elephant’s trunk” ornaments of the Yucatecan ruins. Enormous head-dresses encircle rather than crown the face. There is not that striking copying of nature which some of the clay heads of Cholula exhibit ; everything is distorted by ornamentation. The limbs show the usual disproportions, and the figures are squatting, or sitting cross-legged. Sr. Chavero has, however, a beautiful head of a tiger, from Mitla, very large, with the upper jaw of a bull-dog ; and there is a stone figure of a puma at the Institute of Oaxaca. Its dimensions are : length, 0.81 metre (2 ft. 8 in.) ; height, 0.38 metre (15 inches) ; width, 0.26 metre (10 inches). I must observe, however, that, if this sculpture was found at Tecomavaca, it cannot be Tzapoteco, but is Mazateco or Mixteco.

¹ Burgoa, *Geogr. Description*, etc., vol. i. cap. xxiii. fol. 135, etc. : “. . . empezaban de nuevo al Oriente, y su año á doze de Marzo.” The names of the four years in Tzapoteco were, according to Chavero, *La Piedra del Sol*, in “*Anales del Museo Nacional*,” vol. ii. p. 17, “quiachilla, quiäläna, quiägolöo, y quiaquillöo.” He quotes from Fray Juan de Córdova, *Arte en Lengue Zapoteca*, Mexico, 1578.

I left Oaxaca on the 17th of June, on horseback, for Mitla. The road follows the valley of Tlacolula until about four kilometres ($2\frac{1}{2}$ miles) east of that place, and then turns around a low promontory of rocks into the dreary basin where San Pablo Mitla is the only village in sight. The first leagues of the road pass over very fertile ground ; and while there is no timber except on the picturesque mountain slopes, — almost the entire bottom being under cultivation, — the enormous size of single trees bears testimony to the excellence of the soil. They are mostly fig-trees ; but in the church-yard of Santa María del Tule stands the colossal “Abuehuatl” (*Cupressus disticha*), widely known as “El Arbol del Tule.” I measured the very irregular perimeter of the tree carefully at one metre (3 feet) above the ground, and found it equal to 40.2 metres (132 feet). But on closer observation it is seen that this monster is not a single individual, but a group of at least three, closely grown together. It is the swamp cypress, and the original component parts grew singly around a spring of fresh water, which still trickles out below, apparently from the heart of the tree.

As the valley narrows towards Tlacolula it appears more barren, and salt marshes are traversed. Tlacoachahuaya is a fair-sized village,¹ and Tlacolula contains 4,164 inhabitants.²

¹ It had an Indian governor and an Indian cacique in 1543. This appears from vol. ii. fol. 5 of *Tierras* in the archives of Mexico. Two Indians disputed about the governorship, and the viceroy decided the question by creating the one “Gobernador” and the other “Cacique.” This shows an interesting parallelism with New Mexico, and it would be very important to know what the office or dignity of “Cacique” really signified. In 1746 Tlacoachahuaya had an Indian population of three hundred and sixty families. Villa-Señor, *Theatro*, etc., vol. ii. lib. iv. cap. i. p. 117.

² Busto, *Estadística*, etc., p. xlviii., gives to the whole district 37,373 souls. Villa-Señor, *Theatro*, etc., vol. ii. p. 166, two hundred and sixty-two families. Murguía, *Estadística*, p. 169, says : “La fundacion de este Pueblo es antiquísima y de las primeras que hicieron los Zapotecos. . . . Su antigua vecindad fue de cuatrocientas personas de gente docil y civil, amigos del trato y mercancia” My figures were given to me by the officers of the district, at Tlacolula.

All the Indians are Tzapotecos, and many of them scarcely understand Spanish. We meet them going to or coming from Oaxaca, and they appear to us identical in dress, mode of carrying their bundles and goods, etc., with those of Cholula; only they are somewhat differently shod. The "cac-tli" of the Mexicans is only a sole; the Tzapotecos also protect the heel.¹

Among the Indians whom we encounter on our way, a new linguistic stock appears for the first time, the "Mijes." Their pueblos, perhaps the nearest of which is San Francisco Acatepec, or in their language Te-shyum, begin about three days' journey east of Mitla,² and they go to Oaxaca for a market.

Aboriginal ruins are scattered along the mountain sides,

¹ *Láminas*, Trat. ii. Lam. 6^a, etc.

² The Mijes are not much known. I saw and conversed with a number of them at Mitla. Their appearance, etc., was, of course, not different from that of the Tzapotecos and others. They are represented by Herrera, *Hist. General*, etc., Dec. iv. lib. ix. cap. vii. pp. 187, 188, as bearded, warlike, and practising cannibalism. They appear to be roving Indians, and it is certain that their country is densely wooded. To me they were exceedingly friendly, and gave me, among other information, a fragmentary schedule of relationship, which I subjoin:—

Father, deetsh'y; *my father*, ŭtz-deetsh'y.

Grandfather on father and mother's side, ab-de-ies.

Brother of father, de-i-es-me-gŭŭg; also *sister of father*.

Brother of mother, da-gŭs-me-gŭŭg; also *sister of mother*.

Mother, da-gŭs; *my mother*, ŭtz-me-daag.

My sister, ŭtz-un-me-gŭŭg; *my brother*, ŭtz-ŭn-me-gash.

My son, ŭtz-ŭn-ŭng; *my daughter*, rŭdosh-i-ŭng.

My wife, ŭtz-ŭn-ŭdosh.

My brother's (or sister's) son, ŭtz-ŭn-zogmang.

My brother's (or sister's) daughter, ŭtz-ŭn-zognish.

My uncle's son, ŭtz-ŭn-amagŭŭg.

My uncle's daughter, ŭtz-ŭn-zegŭŭng.

My aunt by marriage, ŭtz-ŭn-zegŭŭng-deetsh'y.

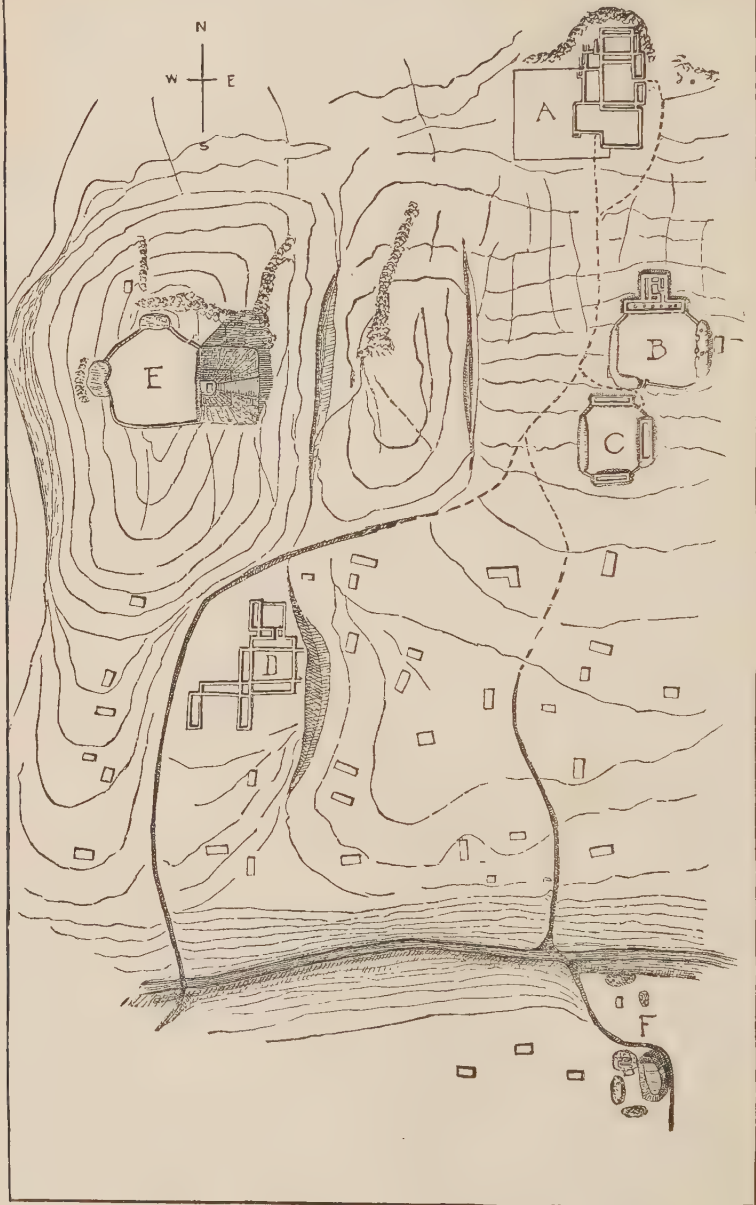
The Mijes now live in villages, and each family either has three houses, or lives in a house of three sections: the dormitory, "ma-ŭtsha-ay'unash"; the kitchen, "ma-utz-maï"; and the store-room, "zash."

but nowhere are they extensive. The pueblos consisted of large houses crowded together for defence. Remains of some importance are found near Tlacolula, at what is called the Pueblo-Viejo, which I shall mention hereafter more in detail. Recent explorations have also, as might have been expected, disclosed the existence of mounds and other ruins, yielding stone sculptures and copper implements, at Teotitlan del Valle.¹

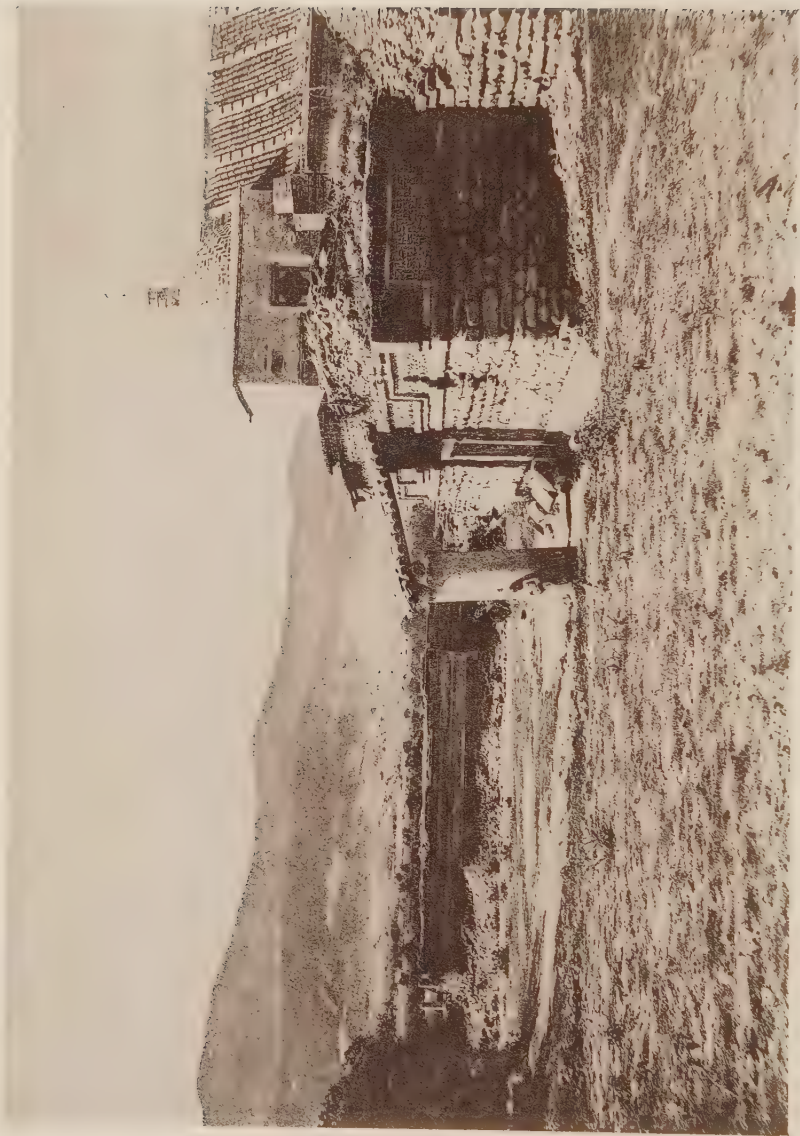
One legua (4 kilom. or $2\frac{1}{2}$ miles) beyond Tlacolula, the road bends into the Mitla basin. Vegetation has been growing more and more dwarfed all the while, for the land rises considerably, and once in that valley we are struck by the air of desolation and dreariness of the surroundings. The mountains are neither particularly high nor unusually barren, but everywhere leaden-gray rocks protrude. The sandy soil is covered with a stunted growth of cactuses, thorny bushes, and occasional larger shrubs; gray bluffs and ledges are scattered over it. A few small fields alone show that this ground is not as unproductive as it appears. Some ranches, and at the farther end of the basin the white church of San Pablo Mitla, are the only signs of human habitation. Below the church extends a green patch,—a grove of *Cereus*, copal trees, and thorny shrubs sheltering the pueblo. A few colossal fig-trees rise above it.

There are no singing birds about, or even crickets. Beetles and large ugly Hemiptera creep and buzz among the bushes. Both varieties of the turkey-buzzard, the black-headed Tzopotl, and the red-headed Aura, circle noiselessly in the air. Over this gloomy landscape stretches a gloomy sky; the wind chills without refreshing or invigorating; everything is dull and cheerless. My stay at Mitla lasted until the 28th

¹ This information is due to Mr. Frederick A. Ober, the naturalist, who also showed me some of the copper implements.



GENERAL PLAN OF MITLA.



RUINS AT MITLA. GROUPS A AND B, FROM THE NORTH



RUINS AT MITLA. GROUPS B AND C, FROM THE NORTH-WEST.

of June, and during the whole of that time the sun never shone. It was the beginning of the rainy season, and showers occurred daily. I was depressed in mind and weak in body from illness, and it was with the utmost difficulty that I could move and work.

The chief ruins of Mitla, in the Tzapoteco idiom called *Lyó-Baa* (entrance to the grave¹), lie north of the small stream running through the pueblo, which is dignified by the name of Rio de Mitla. (See Plate XVII.²) Another group stands on the southern borders of that rivulet. The church and curacy, built into the walls of the most northern ruined houses (A), stand on the highest ground. Thence it slopes southward to the group B and C, a distance of 85 metres (280 feet). On a slight swelling or rocky rise 250 metres (820 feet) west of B C stands E. These three groups are outside of the village proper. At the northern edge of the latter stands the cluster D, 130 metres (426 feet) south from E; 350 metres (1150 feet) south of C, on the other side of the Rio Mitla, are the last ruins, F. The ground slopes generally from north to south, and the river runs over a sandy bottom. On the north side the rock is bare in many places; on the south, there is more sandy soil and earth. The main part of the pueblo, therefore, lies on this side; while the church stands isolated, beyond and much higher than the river bottom. (See Plates XIX. and XX.)

Mitla is an old pueblo. Fray Martin de Valencia visited it about 1533.³ There are notices of it in 1565 and 1574, at the Archivo General.⁴ It then had a Gobernador of its own, which shows that it was an autonomous community. In

¹ I give this translation as I received it from the natives. Whether it is correct or not, I am unable to tell.

² From Bancroft's *Native Races*, vol. iv. p. 392.

³ Motolinía, *Historia de los Indios de Nueva España*, Trat. iii. cap. v. p. 170.

⁴ Vol. viii fol. 42; vol. x. fol. 2.

1746, its population is given as one hundred and fifty families;¹ to-day, the estimate is not less than two thousand souls.² Yet it has no industries or manufactories, and its horticultural products are not varied. I have seen no pottery manufactured here, only thick sandals and a few skirts and "zarapes." The loom used for weaving is of the oldest pattern, and is fastened to a wall at one end, and then stretched out. The weaver leans with her back against a rope or strap which forms the other end, so as to keep it stretched, and at first sight it seems as if she were sitting on this strap.

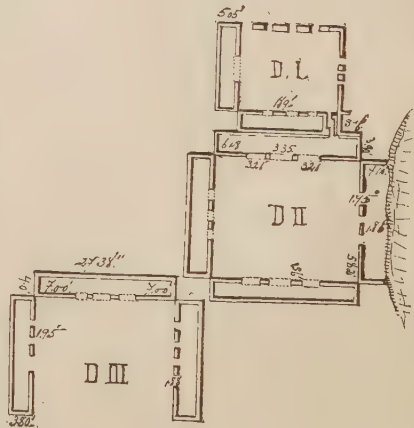
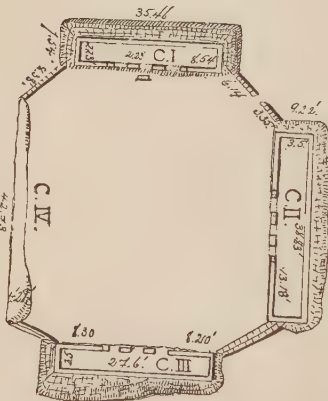
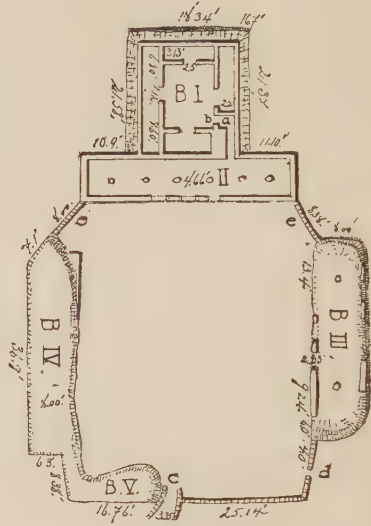
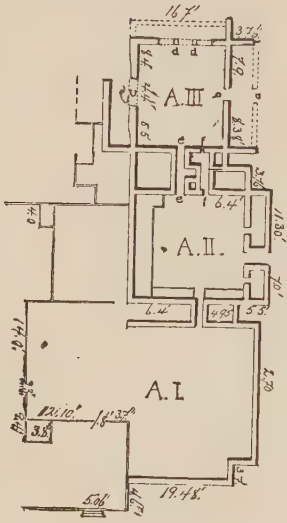
Every year, on the third Sunday of October, a great fair is held at Tlacolula, which lasts three days, and draws crowds of people to that place. Indians visit the fair from as far away as Tehuantepec; and at the same time they go to Mitla with all sorts of presents, importuning the Cura to say masses for the delivery of the souls of their ancestors who died before the Conquest, who, they believe, are restlessly haunting the ruins. I have not been able to trace this custom back to any great antiquity, and none of the authors known to me, of the seventeenth century for instance, make any mention of it. The conclusion, therefore, of my informants at Mitla, that it indicates that the place was formerly a great Indian sanctuary, or at least a famous place of public burial, appears to me somewhat problematical.

The appearance which the ruins present, and the impression which they create, are certainly very striking. They stand in the midst of this gloomy and cheerless landscape, like the relics of another world. Their ornamentation also, composed exclusively of geometrical forms, without any human or animal shapes whatever, the absence of vegetation, the dismal silence that reigns around them, all contribute

¹ Villa-Señor y Sanchez, *Theatro Americano*, vol. ii. lib. iv. cap. xiii. p. 166.

² Official *data* from Tlacolula.

Plans of ruins of Mitla.



to give an air of weirdness which overwhelms and bewilders.

I had seen, in the Library of the Institute of Oaxaca, magnificent ground plans and drawings of Mitla, the excellent work of Mr. E. L. Mühlenpfordt. The fine photographs of M. Charnay¹ and of Herbrüger,² and most of the literature relating to the place, were also somewhat familiar to me. Still, I hoped that an accurate study of the premises might throw some light on the great riddles which they involve.

I began at the most northern end, the cluster A, part of which is now converted into the church and the curacy, securing, after much trouble, the ground plan. (See Plate XVIII.)

This gave me three connected rectangular "blocks," designated respectively, from north to south, A III., A II., A I., and each enclosing a court. A III. has its northwestern corner obliterated, and the northern and eastern outer walls reduced to mere foundations; therefore, only the inner walls are perfect to a moderate height. It appears to have been formed of four narrow rectangles touching at their interior corners. The northern and eastern are so far complete as to exhibit their former shape and size. The first one measures 17.96 metres (59 feet) from east to west, and 3.6 metres (11 ft. 10 in.) from north to south, outside. Subtracting therefore the thickness of the walls, 1.26 metres (49 inches), in every direction, the inside is easily ascertained. The eastern room is 20.8 metres (68 feet) from north to south, and 3.76 metres (12 ft. 4 in.) from east to west, always outside measure, and the fragments remaining on the west indicate a room there of the same length, and only 0.16 metre (6 inches) less in

¹ *Cités et Ruines Américaines*, 1863. Atlas in folio.

² Emilio Herbrüger *Album de Vistas fotográficas de las Antiguas Ruinas de los Palacios de Mitla, Oaxaca*, 1874. 34 very excellent views.

width. The southern room had an inside width of 2.5 metres (8 feet), and a length corresponding to the one opposite. This leaves for the interior court 15.5 metres (51 feet) from south to west, by 18.3 metres (60 feet) from west to south. It is quite certain that the northern, southern, and western rooms were entirely closed from the outside, but I am not positive as regards the eastern. The opening or breach in the foundation, *a*, is directly opposite the undoubtedly aboriginal entrance, *b*, and the latter faces the lintel, *c*, over the former entrance to the western apartment. While it is easy to see that three doorways, separated by narrow pillars, *d d*, led into the northern wing, we cannot any longer re-establish the former doorways of the southern room, as everything has become confused by the opening of the passage *e e*. But the angular corridor *f f* is aboriginal. Its roof consists of heavy flags of stone, showing a trapezoidal cross-section, capped by a thick layer of earth. I shall hereafter return to the construction of the passage.

This "middle" part of A II. is of very difficult access, owing to the great changes which the addition of the curacy has occasioned. I have not been able, for instance, to find a single aboriginal doorway, but hope that subsequent observers may have better success. Still, the same features repeat themselves, as in A III., — four wings, meeting at their interior corners, and enclosing a court, which, as far as I can compute, from partial measurements, was 19.5 metres (64 feet) from east to west, by 17.8 metres (58 ft. 5 in.) from north to south. The width of the eastern room was, inside, 2.5 metres (8 feet); of the northern, the same; of the southern, 2.9 metres (9½ feet); and it is very likely that the western had about the same dimensions.

Of the most southern section of A I. only the outlines remain. They give us an eastern room, measuring inside 24.5

$\times 2.5$ metres (30×8 feet), and a southern, probably 18.2×2.5 metres (70×8 feet). The other sides have been lost in the church, and are therefore purely conjectural. Still, there is every probability that they corresponded to the others in size, which gives for A I. an interior court 24.5×18.2 metres (80×70 feet). Building A, therefore, appears to have been composed of three connected blocks, enclosing an equal number of rectangular courts, and consisting each of four long and narrow halls or apartments. As no partitions are visible, there were consequently twelve of these apartments in the whole structure.

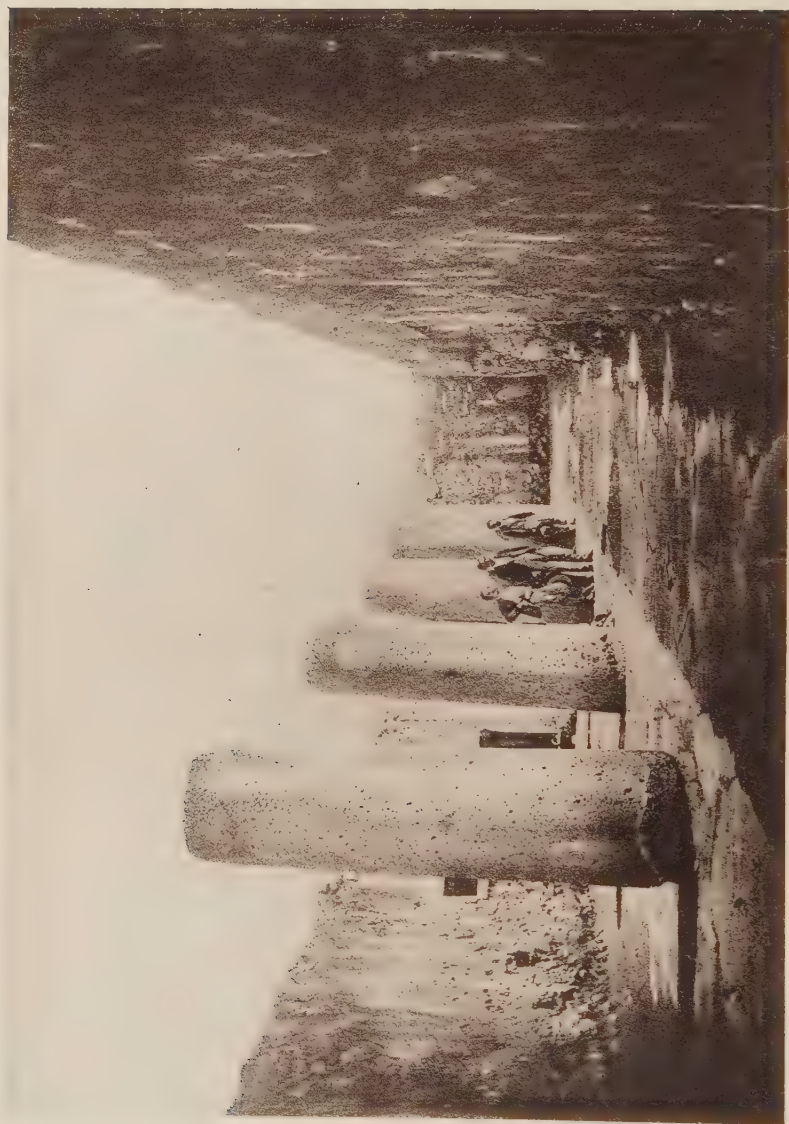
The northern wall of the inside court of A III. bears very interesting paintings, but owing to the absence of the Cura, and the consequent closing of the curacy, I could not copy them. In regard to the lintels and walls, I would refer to subsequent pages of this report, and would merely state that the northern wall is buried on the outside to the base of its lintels, by rubbish as well as by earth gradually swept down against it.

The second group, B, consists of three, perhaps four, separate edifices, of which only two (B I. and B II.), which in fact constitute together but one, are entire. (See Plate XVIII.) Fragments are left of B III., but of B IV. only the rubbish pile of a terrace. Still, the three or four together enclose an interior court, whose dimensions are respectively 51 metres (167 feet) from north to south, and 38 metres (125 feet) from east to west. Although the cluster of houses B I. rests apparently on the ground, the three parts of B II. stand on elevated projecting platforms, made of rubble-stone. The height of the most northerly terrace B I. is about 2 metres (6 feet); its width from east to west, 21.7 metres (71 feet); from north to south, 21.6 metres (70 ft. 8 in.); so that it is nearly square. Along the foot of this terrace a narrow pavement of polished

stone occasionally protrudes, which may have been laid around the whole structure. On it stands the building B I., approximately square, and measuring outside, in every direction except from north to south, 1.67 metres ($5\frac{1}{2}$ feet) less than its terraced base. It covers, consequently, an area of 366 square metres (3,750 sq. ft.), and consists of four apartments around an interior court. The northern one is 8.8 metres (29 feet) long by 2.5 metres (8 feet) wide; the one opposite has the same length, but is slightly wider. The western room measures 17.5×2.5 metres ($57\frac{1}{2} \times 8$ feet), and the eastern 11.26×2.5 metres (37×8 feet). All of these apartments have but a single entrance, and that from the inside. Not a single wall at Mitla has any window or other aperture whatever, except doorways.

The eastern apartment is considerably shorter than the western one, on account of the passage, *a*, communicating with the annexed great hall, B I. This passage is 1.1 metres (43 inches) wide at both ends, and 7.2 metres (23 ft. 8 in.) long along its eastern wall; then turns at right angles and runs to the west for a length of 2.4 metres (7 feet), and issues into the inner court. At the angle it is considerably wider than at either entrance. It is therefore exactly similar to the one described in the cluster A, and the roof is built in the same manner. With the exception of such passages, all the buildings or parts of buildings at Mitla are now roofless.

The great and well-preserved hall B II., to which B I. bears the relation of a northern annex, also stands upon a platform, which no longer projects beyond the walls, if it ever did project. Its outer length from east to west is 40.34 metres (132 feet); its outer width on the west, 9.3 metres (30 ft. 7 in.); on the east, 0.30 metre (1 foot) less. Inside, it is 37 metres (121 ft. 4 in.) long, by 7.1 metres ($23\frac{1}{4}$ feet) wide. This hall contains, at intervals of from 4.6 to 4.66 metres (15



RUINS AT MITLA. INTERIOR OF THE PILLARED HALL, B II, LOOKING EAST.

ft. 2 in. to 15 ft. 4 in.), and about equidistant from the northern and southern walls, a row of six round columns, each 2.85 metres (9 ft. 4 in.) in circumference, and on an average 3.6 metres (12 feet) high. This is the celebrated "Hall of the Columns." (See Plate XXII.) It opens into the great court at a gentle slope. It is plain that the terrace upon which it stands was isolated, and that no connections existed between it and the terraces B III. and B IV. Recent walls of dry stone, *e e*, connect the latter with the southwest and southeast corners of B II., which were built for the purpose of secluding and preserving the ruins, of which the government of Oaxaca at present takes very good care. The platform B III. is 8.4 metres (27½ feet) southeast from B II., and forms a rectangle much ruined, 36.7 × 8.0 metres (120 × 26 feet). Fragments of walls and a large doorway are still standing; also two round columns like those of B II. Recent dry walls, with entrances to the court at *c* and *d*, encompass the latter on the southeast and south. Then begins the high irregular platform B IV., forming the southern and south-western sides of the court, and reaching to within 8 metres (26 feet) of the southwest corner of B II. Its northern part is, like B III., an irregular rectangle, 36.9 × 8.0 metres (121 × 26 feet); then follows a re-entering angle, 6.3 metres (21 feet, from east to west, and 8.38 metres (27½ feet) to the south; finally, the tongue B V., extending 16.76 metres (55 feet) to the eastward. The whole is merely a level pile of rubbish, with a bit of floor protruding at its northeast corner.¹ It is considerably higher above the ground than B II., for the slope to the south is rapid, and part of its sides have been preserved by recent careful piling.

A deep path, about 5 metres (16 feet) wide, separates the

¹ The floors of Mitla appear to be of white calcareous concrete, in many cases painted "Indian red."

cluster B from C to its southwest. The latter stands on a somewhat lower level, and is distinctly composed of four buildings (C I., C II., C III., C IV.), resting on as many isolated steep terraces. (See Plate XVIII.) Modern walls connect them, and thus an octagonal court is formed, whose perimeter is about 182 metres (597 feet). The northern terrace is 4.6 metres (15 feet) high; the eastern, at its northern end, only 1.7 metres ($5\frac{1}{2}$ feet); the western and southern, both 4.20 metres (13 ft. 4 in.). The court also is much depressed on the north side, its level being nearly 4 metres (12 feet) below that of the floor of C I.

Terrace C I. is 35.46 metres (116 feet) long by 7.54 metres (25 feet) broad; C II., 42 metres (138 feet) by 9.22 metres (30 feet); C III., about 35 metres (115 feet) by 6 metres (20 feet) on the east, and 10 metres (33 feet) on the west. Finally, C IV. is a narrow strip, 43 metres (141 feet) from north to south, and only 4.20 metres (14 feet) broad at the southern extremity.

On three of these platforms a building stands, roofless, but otherwise well preserved. The one on C I. measures, inside, 27.76 metres (88 feet) by 2.23 metres (7 feet); the eastern (C II.), 38.83 metres (128 feet) by 3.5 metres ($11\frac{1}{2}$ feet); while C III. is 27.6 metres (88 feet) by 2.5 metres (8 feet). Each of the three halls has three doorways on the inside, which are 3.91 metres (13 feet) high for C I. and C II.; C IV., however, is filled with *débris* to the height of nearly one metre (3 feet).

The structure which crowns the top of the platform (C I.) has the reputation of containing subterranean chambers.¹

¹ The notion of their being subterranean is recent. Even Burgoa, *Geográfica Descripción*, etc., vol. ii. cap. liii. fol. 258, 259, speaks of upper and lower stories, "altos y baxos." Humboldt, *Vues des Cordillères*, etc., vol. ii. p. 281, mentions "une excavation en forme de croix, soutenue par des colonnes." The great



RUINS AT MITLA. SOUTH FRONT OF C 1, SHOWING THE ENTRANCE TO THE BASEMENT.

(See Plate XXIII.) But what is generally taken for underground rooms is merely a basement, built into the terrace or platform which supports the structures. The southern front, however, is so covered with *débris* that there is a gradual slope from the floor down to the middle of the court; and only at the entrance (*a*) is the face of this basement exposed. Plate XXIV. Figs. 14 and 17, show a plan and front view of the same, made to scale. On entering, we find, first, a corridor 1.53 metres (5 feet) long, and 1.6 metres (5 ft. 3 in.) wide. A round column, *b*, 1.7 metres (5 ft. 7 in.) in circumference, and 1.93 metres (6 feet) high, supports the roof. On both sides of it, east and west, extends a gallery, 6.1 metres (20 feet) long, and 1.63 metres (5 ft. 4 in.) wide, whose walls are made like those of the front, and ornamented, like those of the façades in many places outside. Lastly, the passage through which we enter continues beyond the column, so as to form a northern corridor 4.2 metres (13 ft. 9 in.) long, and of the same width. The whole, therefore, has the shape of a cross, whose arms are of unequal length, north and south. The column *b* stands almost underneath the front wall of the house above, so that the northern gallery penetrates to three fourths of the width of the terrace; while in the direction east and west the galleries only occupy about one third of the platform, or one half of the building upon it. Their surface area is equal to about one ninth of the base of the whole terrace. Behind the walls everything appears to be solid stone and earth. The roof is similar to the one over the angular corridors already mentioned in clusters A and B, with flags 0.40 metre (16 inches) thick. On them rest 2 metres (66 inches) of rubble and earth; then comes the

traveller, however, did not visit Mitla himself; and he places the entrance to his underground halls in building B II., cluster B, which is an evident misunderstanding. His authority was a Mexican architect, Don Luis Martin.

stone sill, 0.28 metre (11 inches) thick, and 0.04 metre (2 inches) of floor.

In front of C I. the corridor extends toward the centre of the court, at a lower level. There is, consequently, a lower gallery extending southwards; but, according to the observations of Mr. Mühlenpfordt, it terminated before reaching half-way across to the house (C III.). Its width is 1.21 metres (47 inches), except where the descent takes place (*c* of Fig. 14, Plate XXIV.). There, for a length of 0.8 metre (10 inches) it narrows down to 1.10 metres (43 inches). The walls are similar to those of the higher passages, and the roof is also composed of heavy flags of the same size as theirs. It is therefore to all intents and purposes a covered gallery.

The fourth great cluster of well-preserved houses is found at D, about 280 metres (920 feet) southwest of C. This group greatly resembles A in disposition; also in the fact that it is built on the ground, and not elevated on terraces like B and C. It consists of three buildings, two of which (D I. and D II., Plate XVIII.) are connected like A II. and A III. of the cluster A. Their four rooms also touch at the angles. The same occurs at D III., which stands apart; but of this only three wings are visible. The fourth one, if it ever existed, has left no trace behind.

The northern wing of D I. is gone, except fragments of the south front, which, provided its southwestern corner touched the western wing,—of which, however, I am not absolutely certain,—was 16.37 metres (53 ft. 9 in.) long. It is fronted by a southern room of the same length, and 4 metres (13 feet) outside width, which confirms the theory that the former connected at the southwest. But the space—2.23 metres (7 feet) wide—is so bare of all trace of buildings, as to arouse the suspicion that it may have been originally vacant, and used as a passage into the interior court.

The western wing is 16.87×2.7 metres (55×8 feet). Of the eastern, only the inner front is partly left, and 1.67 metres ($5\frac{1}{2}$ feet) of the southern wall. But the inner court is plainly defined, and measures 16.37×16.87 metres (54×55 feet), or nearly a square.

Building D II. lacks only the outer wall of the eastern wing; otherwise the walls are clearly defined. The northern and southern wings measure, each, 23.76×3.90 metres (78×12 ft. 9 in.) outside; the eastern and western, each 21.25×4.10 metres (70×13 feet); the court is therefore 23.76×21.25 metres (78×70 feet). No outer entrance is discernible, unless it was situated in the outside wall of the eastern wing, which is not probable.

The northeastern corner of the northern wing of D III., and the southwestern corner of the western wing of D II., are 1.71 metres ($5\frac{1}{2}$ feet) apart; and the same distance separates the northeastern corner of the eastern wing of the former, and the southwestern corner of the southern wing of the latter. D III. is therefore an independent structure. Its northern room measures, outside, 27.38×4.0 metres ($88\frac{1}{2} \times 13$ feet); the other two, each, 20.08×3.80 metres (66×12 feet). As already stated, there are no traces of a southern wing; but Mr. Mühlenpfordt has noted its inner front as still existing. It is true that the court of D II. is much filled, in some places half-way up to the lintels; and it may therefore be that the foundations on the front seen by this excellent architect have since become buried.

The analogy between the cluster D and the one at A is now sufficiently striking. There is also in the former, at *a*, the angular passage or communication between D I. and D II., already twice described. While D II. and D III. have each twelve doorways, three on each side, the northern rectangle (D I.) had only eight, its eastern and western wings

showing but one entrance each. A similar disposition exists in the corresponding buildings of the group A. In short, were it not for the isolated position of D III., the cluster D would appear to be a perfect copy of the most northern group of buildings of Mitla.

I now turn to the two remaining groups of ruins, marked respectively E and F on the general plan, Plate XVII. They are different from the others, in that both of them include mounds of worship.

Group E lies 250 metres (820 feet) west of C, and 130 metres (430 feet) north of D; its ground plan is given on Plate XXV. Fig. 6. The main feature is a truncated pyramid, E III., now 9.2 metres (30 feet) high, and measuring along the base 54.5 metres (180 feet) from north to south, and 41.9 metres (137 feet) from east to west. Its western declivity is so steep as to be almost vertical; the eastern slope is very gradual. (See Fig. 7.) In construction, it presents the remarkable phenomenon, that while the lower, and consequently much larger, half of its height is of rubble-stone, the upper half is of adobe. The single bricks measure $0.13 \times 0.35 \times 0.05$ metre ($5 \times 14 \times 2$ inches). No other binding material than earth, and even that used very sparingly, is visible between the stones; the adobe is gray, and laid in the same kind of soil. The irregular mounds E I. and E II. are about 2 metres (6 feet) high, sharply cut at their edges, and utterly ruined. They are both made of adobe, $0.25 \times 0.16 \times 0.04$ metre ($10 \times 6 \times 2$ inches). Their original form and size cannot even be guessed at. The little knoll E IV. is barely discernible. A modern wall connects the three principal structures, so as to leave E IV. in the centre of a large courtyard.

The cluster F lies on the south bank of the Rio Mitla, and is the most ruined of all. With the exception of F III. and F IV., the structures shown on the ground plan (Plate XXV.

Fig. 8), are merely decayed oblong mounds, utterly shapeless, so ruined that it is barely possible now to distinguish how far they were of stone, and how far adobe entered into their composition. F I. shows, towards the river front above which it stands, broken stones with earth between them, similar to the walls of the better preserved buildings. F II. is merely a mound of earth, overgrown with verdure, from which stones occasionally protrude. The length of the former is 30 metres (98 feet); of the latter, about 18 metres (59 feet). Their height nowhere exceeds 3 metres (10 feet). The group south of the road which leads up from the river, a distance of about 80 metres, or 265 feet, implies a large courtyard, in the centre of which are the remains F VII., which courtyard is formed by the decayed mounds F V. and F VI., the mound of worship F. IV., and the hill F III. The last is a rectangular terrace, 20.63×16.76 metres (68×55 feet), of broken stone, supporting the long narrow rectangles *a* and *b*, which are of adobe. There is scarcely more than a half-metre (1 to 2 feet) left standing above ground of the two rooms mentioned, which are united, and communicate at their eastern ends. The room *a* is 2 metres (78 inches) wide, and of undeterminable length; *b* is 15.5 metres ($50\frac{1}{2}$ feet) long, and only 1 metre (39 inches) in width. They stand at an elevation of about 4 metres (13 feet) above the ground, and nearly in the middle of the terrace thus formed.

The mound of worship (F IV.) is 33.5 metres (109 feet) long from north to south, and about 25.2 metres (83 feet) broad from east to west; its height is 9.3 metres ($30\frac{1}{2}$ feet), and the irregular upper platform measures, so far as I could ascertain, about 24×23.5 metres (80×77 feet). Remains, or rather traces, of adobe walls stand on the summit; but some of them also contain red brick, so that I am uncertain whether they are aboriginal or modern. This entire hill, whose sides

are now very steep, is of broken stones, with very little earth between. On the north side, at an altitude of 1.7 metres (5 ft. 7 in.), a white calcareous ledge, 0.12 metre (5 inches) thick, appears; another similar one is visible at a height of about 6 metres (20 feet), and the top is covered by a layer of the same material, as by a floor. This latter is painted Indian red. (See Plate XXV. Fig. 9.)

There remain the two little fragments F VII. In height they do not exceed 1.40 metres (55 inches). Like F IV., they are covered by a white calcareous layer of the thickness of 0.09 metre (4 inches). Fragments of a stone ornament, similar to what is frequently repeated in the other buildings, were found by me near this little pile.

This closes the list of buildings or ruins scattered about the pueblo of San Pablo Mitla. I am inclined to believe, also, that these are all which ever existed in that place, except perhaps at A, on the general map of the pueblo and ruins, east of the curacy. There, out of a slightly raised area, now cultivated, a solitary round pillar protrudes. It is of the size of the column in the basement of C I., cluster C. Broken stones lie about, and the cultivated patch itself suggests, by its appearance, the possibility that a ruined structure once stood on the brow of the hill alongside of the cluster A.

It seems almost impossible for any other buildings to have existed to the north of the Rio Mitla, except those mentioned, without having left behind very distinct vestiges, — of which, however, there is no trace. The surface is generally denuded and much eroded; large spaces show the bare rock; and under such circumstances crumbled walls could not have absolutely disappeared, even if the largest portion of their material had been used for modern edifices. The stones from the buildings on the platforms B III. and B IV. of cluster B, C II. of cluster C, and the destroyed walls of cluster D, would have

been ample for what was needed for the construction of the staircase of A III., group A, and what may have been used for the church and curacy. There was even a surplus, which went to building the old church, — a long, narrow, low edifice of stone, still standing, roofless and abandoned, in the Plaza of Mitla ; or rather, the stones from all the ruins, including F, first were used for that edifice, and afterwards for the more recent structures.

In the same *plaza*, in front of the former municipal house, a round column is planted. It agrees in dimensions with the two remaining columns of B III., cluster B, as well as with the two round pillars fronting the entrance to the curacy. It seems reasonable, therefore, to conclude that these three monoliths originally came from that building.

Other fragments of stone, sculptured plates, blocks, and slabs, are occasionally dug up at a very slight depth, or are found lying loose on the surface of the south side of the river, where the main pueblo is built. But I have been positively assured that no trace has ever been found of structures on that side beyond F. Similar houses, however, are found, as I shall hereafter relate, close by the present village.

The ruins of *Lyó-Baa*, therefore, consist at present of thirty-nine edifices beside the two artificial hills, if we consider that the wings of A and B are without direct connection with each other, and that B I. and B II. of cluster B form one body ; that the now vacant platforms once supported houses ; that the cluster F contains but one mound of worship ; and that E I. and E II. of E, and F I., F II., F III., F IV., and F V. of F, may be regarded as platforms which have once supported houses, as is shown in the case of F III. For the present, I will not attempt to decide for what purposes these houses were built ; but use the term merely in order to distinguish those structures in which the space enclosed exceeds

in area the enclosure, characterizing them by this name as differing from the mounds, whose mass appears to be solid throughout, or for the most part.

Turning now to architectural details, we see that the houses of Mitla, or rather Lyó-Baa, are divided into two classes so far as material is concerned, houses of adobe and houses of stone.

HOUSES OF ADOBE.

The only specimens which I have found stand on F III. (Plate XXV. Fig. 8), and the adobe bricks are evidently made of the same sandy soil now about the place, used in the adobe houses of Mitla to-day. Neither grass nor straw enters into their composition, and they are laid in earth of the same kind. The walls have a thickness of 1.17 metres (46 inches) between *a* and *b*, and of 1.07 metres (42 inches) elsewhere, and are coated inside with a thin layer of white plaster, whose composition I could not investigate. They are painted Indian red, or rather maroon, which may be the result of change in the original hue, as Indian red is elsewhere the prevailing color in all the buildings. The corners of the rooms are not sharp and angular, but rounded by the plastering, and there is no sign of outside coating, or of stone facings. We were struck by the extreme narrowness of the room *b*, while *a* is twice as wide. Originally there seems to have been a communication between the two, but on the outside the former is completely closed. The terrace on which it stands resembles all the other terraces at Mitla.

7 The foundations visible on the top of the mound F IV. are too indistinct to admit of any conclusions as to size. (See Plate XXV. Fig. 9.) They appear to rest on the layer or seam *c*, which is painted red, showing that it was the upper floor of the mound.

HOUSES OF STONE.

These are divided into two classes, — such structures as rest on the ground, and such as stand on elevated terraces, — the walls of which measure respectively : —

Of the first class, cluster A, 1.26 metres (49 inches), and 1.35 metres (53 inches) ; cluster D, 1.17 metres (46 inches), and 1.22 metres (48 inches).

Of the second class, cluster B, 1.17 metres (46 inches), 1.18 metres (46 inches), 1.07 metres (42 inches), and 1.08 metres (42 inches). The door-pillars are generally thicker. Cluster C, 1.35 metres (53 inches) in several places, and the door pillars as thick as 1.75 metres (5 ft. 8 in.).

There appears, therefore, to be no marked difference in the massiveness of construction between the two classes, or in the manner of construction. Each wall, whether exterior or partition, consists of two distinct parts, the body and the protective or decorative facings. The former part is almost exactly similar, bulk and material excepted, to the stone walls on the west side of the Rio Grande in New Mexico, in the ruined pueblos on the Potrero Viejo, Potrero de las Vacas, and other places. It consists of broken unhewn stones, imbedded, not in mortar, but in earth or clay, and laid in tolerably regular courses. The proportion of binding material to the stone is sometimes very nearly two to one. The work is better than at Pecos,¹ but not nearly so nice as that of the thin walls of the two New-Mexico ruins just mentioned. Both faces of the wall are more regularly arranged than the inside.

The outside of these rough piles is faced by an armor of stones, originally broken by hammering, and subsequently smoothed by friction on those sides which are exposed, or which came into contact with the faces of others through

¹ See "Report on the Ruins of the Pueblo of Pecos," pp. 55, 56.

superposition. Plate XXIV. Fig. 12, shows a pillar in cluster C according to scale and measurement, which may be regarded as fairly typical. The polished blocks are imbedded on their inner sides in the clay of the wall, and are held together by mere pressure from above, without any mortar or binding substance whatsoever between the faces. The lowest one invariably slopes outward, and appears merely to lean against the back wall, its top not being fitted so as to join the lower surface of the stone immediately above it. Usually the outer edges alone touch, but occasionally there are instances where both surfaces meet. Where there is no wall behind, the armor stands alone, as in Plate XXIV. Fig. 20; but the series of blocks encasing the passage leading outwards and into the lowest gallery forms something like an abutment protecting against any sliding of the lowest stones.

Taking now the façades, we find that their plating presents a certain analogy in every building. Each, if we pass over the doorways for the present, consists of the following parts, beginning at the bottom (Plate XXIV. Fig. 1):—

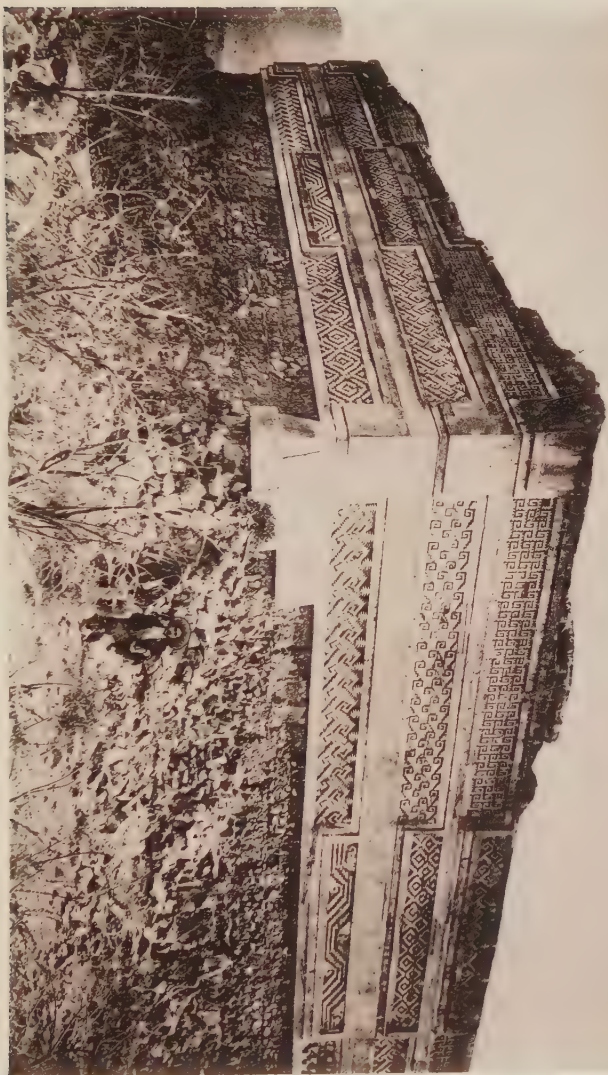
1. Parallelopipeds of smoothed stone, running around the whole edifice like a sill, marked *a*, in the figure. These are lower than the floor.

2. Inward sloping plates, *b*, which terminate at the level of the floor.

3. A series of parallelopipeds, also running around the whole building, and marked *c* in the figure. This stands inside the plane of *a*.

Above *c* a difference begins to show itself between the façade and the corners. (See Plate XXI.)

The façade is composed of rectangular fields, ornamented by a peculiar mosaic-work of stone. It contains three tiers of this ornamentation, in six lengths, three on each side of the doorways; there are consequently eighteen such rectangles



RUINS AT MITLA. NORTH-WEST CORNER OF GROUP B

Details of GROUP C. MITLA

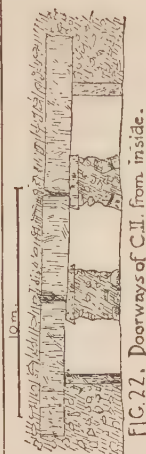
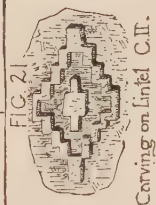
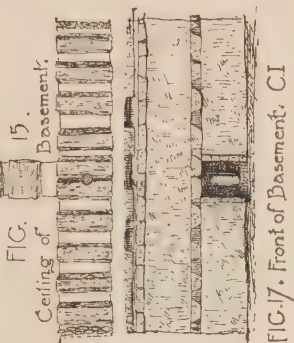
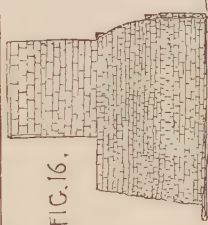
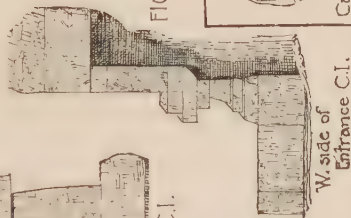
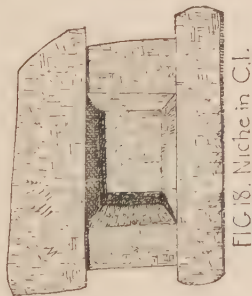
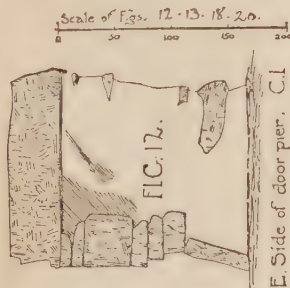
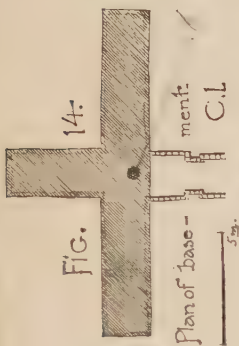


FIG. 14.



DETAILS OF GROUPS B AND C, MITLA.

in this particular front. But while the three tiers seem to be general, the three lengths are not everywhere found. Thus, in the case of the eastern wing of C, only one appears on each side of the doorways.

The corner begins to slope outward above *c*, and for the fields of mosaic are substituted the large upright flags, or rather blocks, *f*, *l*, and *r*, all of which are slightly oblique. Above these the layers of oblong stones, *g h i*, *m n o*, and *s*, run round the entire building, *i* and *o* corresponding to *c*, and constituting the lower moulding of the second and third tiers of decorative panels, as *c* does of the first. The bands *d* and *e*, *j* and *k*, *p* and *q*, belong to corners alone, serving as basal plates to *f*, *l*, and *r*, respectively. The uppermost layer, *s*, also serves as a sort of plate, and supports the roof along the whole length.

Two things here become apparent : —

1. That the rectangular fields of so-called mosaic-work, and consequently the entire fronts and sides of each house, are set back from the corners.

2. That the facings slope outwards from the base to the top. The highest tier of ornamentation stands farther out than the second and third, although the difference is not very perceptible. Even at the corner, in a total height of 3.57 metres (12 ft. 2 in.), the top at *s* only protrudes 0.30 metre (12 inches) beyond the base at *b*. Compare Plate XXI.

The mosaic-work is set into frames, and Plate XXIV. Fig. 2, is intended to represent the mode of construction. Little brick-shaped stones of various lengths and widths, sometimes squared, but mostly wedge-shaped, are driven into the clay of the wall so as to fill the space inside of the frames with a geometrical ornamentation, which, although it is not absolutely symmetrical, still is intended to be so, and therefore presents a striking and pleasing appearance. Each frame has its own

pattern, the next one, whether alongside or above, showing a different one; but the patterns do not repeat themselves symmetrically or with regularity. The difference, however, between the various designs is not so great as to make it appear unharmonious, and the "rule of thumb" has been followed with such care in their execution that at first sight, and without measurements, it is not noticed how unsymmetrical they actually are. That such is the case, however, can easily be inferred from the dimensions on the ground plans. Thus, in the cluster B, the western part of the front of B II. is 0.95 metre (37 inches) shorter than the eastern. The west side of the building falls 0.30 metre (1 foot) short of the east side. Differences of several centimetres (at $2\frac{1}{2}$ per inch) or decimetres (4 inches) are found to be common everywhere upon applying the plummet to them. It is known, however, that earthquakes are remarkably frequent in this region, and therefore I do not give undue importance to these results of my investigation. What appears to me of greater weight is the fact disclosed by a frequent application of the square to the polished blocks. That instrument fitted only in a minority of cases; in most instances it revealed an irregular deviation from the right angle, though the lines were evidently intended to be perpendicular and horizontal. All this shows that the people who reared the houses of Lyó-Baa did their work by mere eyesight, and without even the most elementary mechanical devices of the art of building.

The mosaic-work just discussed does not consist of small bricks only; it is sometimes a combination of such small blocks with larger plates. This peculiar ornament forms the decoration closing the gallery of the basement in building C I., cluster C. This pattern I have found only in that basement, along with other designs found also on outside walls. It appears from this and from the various rooms of B I., cluster B, that

the mosaic-work was used inside of smaller apartments; the larger halls, however, were apparently simply plastered with a coat of earth or clay, covering and smoothing the stone-work, and over it a thin white layer (of gypsum, perhaps) painted Indian red.

While the inner court of B I. in B shows the decorative mosaic distributed over all its walls and set in smaller frames, the inside walls of the small rooms had only a little more than the upper half of their height thus adorned. The lower portions appear to have been plastered.

The inside walls of the larger rooms contain only niches, one of which, from the north building of cluster C, is given on Plate XXIV. Fig. 18. It is 0.46 metre (18 inches) deep, and encased or formed by four blocks. The one on the top is 1.15 metres (51 inches) long by 0.33 and 0.30 metre (13 and 12 inches) wide; the lower one measures 1.17×0.19 metres ($52 \times 7\frac{1}{2}$ inches); the sides are 0.40 metre (16 inches) high, tapering upwards. Here we have again the same lack of symmetry already observed. There are three such niches in that apartment.

But one other feature of the walls remains to be described; this is the doorways. Three kinds have to be noticed:—

1. Entrances to basements.
2. Terminations of inner passages.
3. Doorways proper.

The first kind is best illustrated by reference to Plate XXIV. Fig. 17; the top is formed by two flags of the roof joining close together. It is in order to support these two blocks that the round column is placed at the entrance of the basement.

The corridor *a* (Plate XVIII. B I.) contains the best specimens of the second kind. Fig. 4, Plate XXIV., represents its southern doorway, or entrance from the Hall of Columns.

Its height is 1.70 metres (5 ft. 7 in.), its width 1.10 metres (43 inches). Only three blocks of polished stone, two upright ones and a horizontal one laid across as lintel, compose the frame. These dimensions give an idea of the unsymmetrical construction. The door-post *a* is 0.51 metre (16 inches), the post *b*, 0.60 metre ($23\frac{1}{2}$ inches), wide. The lintel *c d* measures 2.73 metres (8 ft. 7 in.) in length; its depth is 1.07 metres (42 inches); the height at *c*, 0.50 metre (20 inches); at *d*, 0.52 metre (21 inches). While the end *c* projects 0.52 metre (21 inches) beyond the post *a*, the post *b* projects 0.06 metre ($2\frac{1}{2}$ inches) beyond the end *d* of the lintel. For the other entrance into the same passage from the inner court, I refer to Fig. 3 of the same plate. Although it forms a part of the facing of the court, great irregularities are apparent. Thus the top lintel projects 0.83 metre (33 inches) to the left, and only 0.29 metre ($11\frac{1}{2}$ inches) to the right. The doorway of the passage in the south wing of D I., cluster D (Plate XVIII.), resembles in its construction the one figured in Plate XXIV. Fig. 4; its width is 1.27 metre (50 inches).

The third kind, the large doorways, or main entrances to the houses, all open upon the inside courts. I have not found a single one in the outer walls. With the exception of the two smallest rectangles, A III. of A, and D I. of D, whose east and west wings have each but one entrance, all the wings, whether connected at the angles or standing separate, have always three such doorways close to each other, and occupying only approximately the middle of the front. The ground plan shows a variation between 0.02 and 2.9 metres (1 inch and $9\frac{1}{2}$ feet). These doorways are formed by piers of stone and clay, generally thicker than the walls, each flanked by an upright slab, and capped by a square block, on which rest the ends of enormous lintels.

Plate XXIV. Figs. 5, 6, 7, represent the great doorway still

standing in the east wing of cluster B. The lintel is broken, or rather rent, but its north end is still perfect. This shows the two cavities *a a* (Fig. 6), 0.19 metre ($7\frac{1}{2}$ inches) and 0.14 metre ($5\frac{1}{2}$ inches) high, and 0.20 metre (8 inches) wide. I found similar cavities also in the terminal faces of other lintels. Those still standing are filled with clay or mud of the wall, which shows that they were not made for the insertion of another stone or hard substance, to be used as a clamp. Their purpose may have been to help in the transportation of the unwieldy masses.

The average height of these entrances scarcely exceeds two metres $6\frac{1}{2}$ feet, and in many cases is slightly less. The width is very irregular, not only throughout the ruins in general, but in each building, as the ground plans show. Neither is the middle doorway generally wider than the others. While there is plainly a desire to be symmetrical, it is equally clear that the mechanical means to accomplish this were not available.

The size of the lintels varies greatly. Perhaps the shortest is that over the western doorway of the north wing of A III., which is 2.7 metres (8 ft. 10 in.) long. But the most remarkable group is the one in the east wing of the cluster C, given on Plate XXIV. Fig. 22, which is also the one best preserved. The stones are huge parallelepipeds, 1.03 metres (40 inches) high, 1.52 metres (5 feet) wide, and have, counting from north to south, respectively, the enormous lengths of 7 metres (22 ft. 10 in.), 4.45 metres (14 ft. 7 in.), and 5.93 metres ($19\frac{1}{2}$ feet). Here, the middle one is the smallest, and between them is a space of 0.15 metre (6 inches) carefully stuffed with clay and small stones. The outer faces of the lintels are mostly carved in imitation of the geometrical work of the mosaic. Plate XXIV. gives some of its leading designs, among which is a cross (Fig. 21). The outer pillars are faced

so as to project; side views of these facings are given in Plate XXIV. Figs. 13 and 20.

Not all the lintels are carved on the outside. All have, however, an outer projection on the top and sides, like a frame. In the north wing of A III., cluster A, and the north and east wings of D III., the recesses thus formed are coated with a thin crust of white plaster, on which figures of various sorts appear, painted in Indian red. The most interesting ones are in the buildings of the church and curacy, but, as I have already stated, I could not copy them. Four fac-simile copies from D I., cluster D, are given on Plate XXV. Figs. 1, 2, 3, 4. The first one, now much defaced, was also copied by Mr. Mühlenpfordt, and his drawing shows that it was originally of the same design as those carved on the "sacrificial stone" at Mexico, and on the small disks, shaped like mill-stones, which I have identified with the *temalacatl* of aboriginal sacrifices. The human shapes shown in Figs. 2 and 3 are placed as if in procession, with the face downwards, on both sides of the first, which occupies very nearly the centre of the lintel. These figures, having been originally made on tracing-paper, do not, intentionally at least, exaggerate either the perfections or the defects of the originals. It is easy to see how rude pictorial art must have been among the builders of Lyó-Baa. Still the curacy contains paintings much more elaborate and somewhat better executed, for a considerably restored copy of which I refer to Mr. Bancroft's "Native Races."¹ They resemble, in the head-dresses, some paintings and reliefs from Chichen-Itza. But on the whole the designs

¹ Vol. iv. p. 411. The only objection that might be raised against the otherwise perfect work of Mühlenpfordt is a certain tendency to over restoration. This is a danger incurred by every explorer, and hardly any one escapes it. Photography itself is perhaps the most deceptive medium for a true representation, and never comes up to the standard of an accurate drawing made to scale, and without regard to perspective.



FIG. 4.

FIGS 1, 2, 3 & 4 Fragments of Painted Stucco.

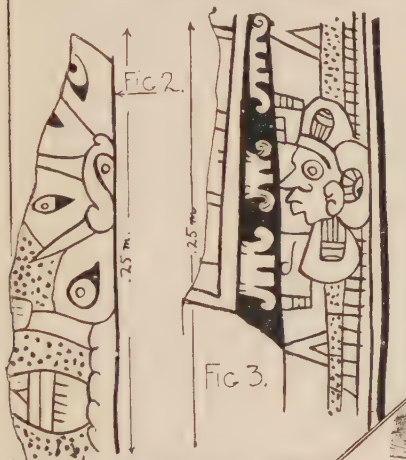


FIG 3.

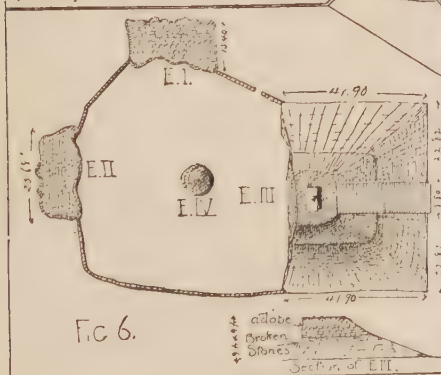


Fig 6.

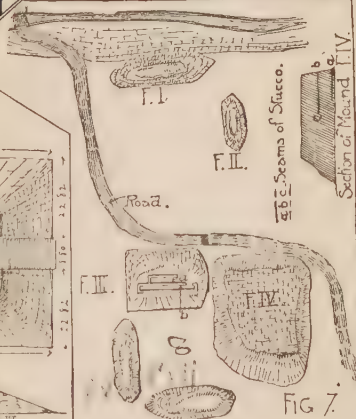


FIG 7.

appear much more like those on some of the yet unclassified paintings, or codices, which Sr. Chavero has boldly, but as I believe with sufficient grounds, termed "Mixteco." Accurate copies of all the paintings of Mitla would be very desirable. The heads which I have copied give a very imperfect idea of the head-dresses, etc. of its former people. Yet the main value of such aboriginal work consists in what it tells us of the manners and customs of their originators, and not in any supposed symbolism or imaginary chronological record.

Having thus, as I believe, sufficiently described the walls of the houses at Lyó-Baa, we will now explain the construction of their roofs, of which traces of two kinds are still extant :—

1. Roofs over narrow, small apartments.
2. Roofs over corridors and basements.

The walls of the northern annex (B I.) appear in places to be capped by a mass of stones and earth, on the top of which lie fragments of a white concrete. In the lower portions of this, casings are visible, composed of two upright plates resting on the top of the wall, with a third plate laid over them. They look strikingly like rude gutters, emptying into the rooms, but are not visible outside. When I requested Sr. Quero, a resident of Mitla, who had been exceedingly courteous to me, to examine these places with me, he at once exclaimed, "Why, this is the roof, and the stone casings are the places where they fastened the cross-beams of the ceiling." It was a well-known fact, and had been already noticed by Mr. Mühlenpfordt. On Plate XXIV. Figs. 8 and 9, I give a side and front view of this roofing, as still existing on the outer wall of the northwest corner of annex B I., cluster B. The casings have an aperture of 0.22 metre (9 inches); they are 0.48 metre (19 inches) deep, and 0.25 metre (10 inches) high to the top plate. The side and top stones have a thick-

ness of from 0.06 to 0.08 metre ($2\frac{1}{2}$ to 3 inches). The casings are about 0.20 metre (8 inches) apart, the interspaces are filled with earth and stones, and the same mass is carried up 0.30 metre (12 inches) above the upper slab, and on it rests, finally, 0.10 metre (4 inches) of white concrete. The whole roof, therefore, including the ceiling, has a thickness of about 0.77 metre (30 inches) from the inside; and the casings admitted a beam at least 0.20 metre (8 inches) in diameter, if round, as Mr. Mühlenpfordt also infers. The length of the beams, if they were laid across the width of the room, was therefore about 3 metres (10 feet). The last-named explorer suggests that mats were placed on the beams to prevent the earth and stones from falling through between the timbers; and a similar statement was made to me at Mitla.

The roof, or rather ceiling, of the basement is given on Plate XXIV. Fig. 15. The east and west gallery is covered by ten trapezoidally cut blocks resting on the side and front walls, 2.56 metres ($7\frac{1}{2}$ feet) long, 0.40 metre (16 inches) thick, and, at the bottom, from 0.07 to 1.18 metres (2.8 to 46 inches) wide. They are set at intervals of from 0.21 to 0.60 metres ($8\frac{1}{2}$ to $23\frac{1}{2}$ inches); but the tops, being broader, nearly join. Above it earth and stone form, for nearly 2 metres (6 feet), the overlying material. A similar roofing covers the corridors, but the stones are laid closer, so as to touch. Whether or not a coat of concrete capped the whole, I am unable to say; but all the passages are much lower than the rooms, and nowhere exceed 2 metres ($6\frac{1}{2}$ feet) in vertical height. Mr. H. H. Bancroft, speaking of the round columns of Mitla, makes the judicious remark, "It seems evident that the columns in the southern wing were intended to support the roof,"¹ but no trace is left of a roof over these structures. Burgoa, however, describes it as still existing in 1644, and as

¹ *Native Races*, vol. iv. p. 401.

composed of heavy slabs of stone resting upon the columns as a support.¹ The roof of the cluster B, therefore, excepting its northern annex, must have been somewhat similar to that over the basement and the corridors, made of stone flags fitted so as to touch longitudinally, with probably a layer of earth, stone, and concrete above. It will also be observed that these buildings appear to have been twice as wide as any of the others, and many of them three and even four times as wide.

We now come to the lowest part of the structure, — the terraces or platforms on which the houses were erected. Only two of the groups were terraced, B and C.

The four terraces of the four wings of C all contained basements, and it is presumable that these were like the one still visible in wing C I. The courts usually are more elevated than the ground outside, possibly on account of their being filled up with rubbish. The government has had the outside of the clusters cleared, and the terraces strengthened; but the courts, though looking tidy, still contain layers of rubbish.

From the descriptions of Burgoa, we might be led to infer that in his time the four terraces of B were also hollowed into basements.² But I am unable to find any vestiges of this, and

¹ *Geográfica Descripción*, etc., cap. liii. fol. 259, vol. ii.: "No se sabe de que cantera cortaron unos pilares tan gruesos de piedra, que apenas pueden dos hombres abrazarlos con los brazos: estos aunque sin descuello, ni pedestales, las cañas tan parejas y lisas que admira: son de mas de cinco varas, de una piesa: estos servian de sustentar el techo que unos á otros en lugar de tablas, son de losas de mas de dos varas de largo, una de ancho y media de grueso, siguiendose los pilares unos á otros para sustentar este peso: las losas son tan parejas que sin mezcla, in betumen alguno pararon en las juntas tablas traslapadas, y todas quatro salas, siendo muy espaciosas estan con un mesmo orden cubiertas, con esta forma de bovedage." It may be inferred that the cluster B consisted of four wings, all of which had roofs of stone, and perhaps columns. The slabs from both sides met on the top of each column, and the size indicated by Burgoa indeed favors this view.

² *Ibid.*: "En los quatro altos, que mas del mesmo arte, y tamaño de los baxos."

the height of the platforms, which everywhere rest upon the bare rock, hardly justifies the assumption.

In several places the terraces have been opened and attempts made at excavations, but I have not been able to ascertain anything satisfactory in regard to the results. While some have told me that they have yielded human bones as well as objects of art, others, equally trustworthy, assured me that nothing had been found except a solid pile of broken stones and some earth. I cannot, so far as I am informed, regard them as having been made for sepulchral purposes. They were necessary in order to secure level ground. The surface where they stand is almost bare rock, and very uneven, and the work of digging foundations, or of merely levelling the top, alone would have been an enormous task for implements of stone, or at best of copper. The Indians, therefore, heaped up an artificial foundation, around a gallery built in the form of a cross. This foundation, made of rubble and soil, they encased with a narrow pavement of polished stone, on which rested a facing stretching obliquely up to the sills of the house. Specimens of this facing are still visible. An opening to the gallery was left on the inner front, towards the court; and if Burgoa is right in stating that there was such a basement in each wing, then we might look for vestiges of it in excavations beneath the other sides of the cluster C. The building of the basements with a solid wall and roofing certainly strengthened the platforms very much, in a country where earthquakes are at least of monthly occurrence; but while this is sufficient to account for their construction, I will not say that they were made for this purpose only. No traditions record their having been tombs, or collective sepulchres; but they might, very appropriately, have been store-rooms. Still, considering the scarcity of soil in the valley of Mitla, the possibility of their having been used as a place of deposit for funeral urns (entire

skeletons are hardly probable), and to preserve them, is not to be entirely overlooked. It is a great misfortune that no detailed reports of the discoveries made around the buildings, both outside and inside, have come down to us from earlier times.

As for the object for which the lowest gallery, the one extending southward from the basement of C I., cluster C, may have been built, I will not venture to express any opinion. Mr. Mühlenpfordt has left, at Oaxaca, a diagram of this passage, made with his customary care; and I recollect that it is represented as ending in the rock towards the centre. I am not quite sure whether even this lowest covered way would not have come out above the ground, in the centre of the court, had it been completed; but as it is, it appears to have remained unfinished.

The terraces therefore consist, like the houses which they support, of a body of rough stones and soil, protected by a polished casing. It is highly probable that steps, or stairways, must have led up to the doorways; and the last remnant of them, perhaps, is the block still in front of the entrance to the basement. It is 0.18 metre (7 inches) thick, rests on two upright slabs, and its lower surface is 0.18 metre higher than the roof of the lowest gallery. This may possibly suggest a stairway of stone, each step being 0.18 metre high, which at the same time served as roof to the passages beneath.

Clothed in this stony protection, — stone-clad, in fact, — the structures of Lyó-Baa were not only weather-proof and fire-proof; they were also easily defensible. This was especially the case with those clusters which, like A and D, formed a connected series of closed rectangles. It is evident that in one place, at least, there must have been an entrance; but although the edifices never had any doors with which the

doorways could be closed, this entrance could have been easily barred and defended from within.

I will scarcely venture any suggestions as to the manner in which the houses were built. But it is evident that, for those groups in which the wings do not stand connected, each terrace, with its superstructure, could have been erected by itself. It seems very probable, too, that the walls of each house had to be carried up from below on all four sides, and that the facings were put on and fastened in the still wet mud as the body rose. This necessitated a considerable number of workmen; so large, indeed, that I cannot but suspect the employment of communal labor.

The material was certainly obtained in the vicinity. On the day I left Mitla I was told that the stones for lintels, etc. were procured from a place about 6 kilometres ($3\frac{1}{2}$ miles) east of the village, where traces are still found of aboriginal quarrying. It was too late then to ascertain the truth of this statement. But the stone—a rather light, strongly amygdaloid rock, breaking easily—at all events comes from the basin or the mountain slopes encircling it. Whence the carbonate of lime was brought of which the concrete ledges were made, I have not been able to learn.

The transport of the enormous lintels and flags, or slabs, could have been easily accomplished by wooden rollers; and the raising of them some six feet above the ground may have been effected by an artificial inclined plane, heaped up against a wall, as represented in a photograph from Peru, given to me by Mr. Squier.

The inside of these structures must have been little better than an obscure cavern. While the height of the apartments nowhere exceeds 4 metres (13 feet), and in most instances falls below that, the best illuminated building shows a proportion of width to length as 1 to 4. The average proportion, how-

ever, is 1 to 7. Into these corridors, rather than rooms, light was admitted from one side only; and the aperture, or three apertures, for this purpose were in no case higher than one half of the "hall," while their width nowhere exceeded one fourth of the entire length. The "Hall of Columns," owing to its breadth, was perhaps the best lighted of all; yet the three doorways together occupy but one sixth of its length, and their combined area only one eleventh of the surface of the entire front. If the three doorways were distributed along the front at greater distances, even then, owing to their inconsiderable height, the interior would still be dimly lighted. In their crowded condition, the so-called "palaces" of Mitla were no better illuminated than the so-called "subterraneous chambers" of their basements. Built without the knowledge of mechanical contrivances, ornamented by mere "rule of thumb," imperfectly ventilated, and correspondingly dark, they appear only as the barbaric effort of a barbarous people.

The "mounds of worship" scarcely need any further mention. While I believe that they are much disfigured, it is impossible to say how far they may have been reduced in size. Neither can I, as yet, offer any conjecture in regard to the fragments E III. and F I., Plate XXV., but shall have to return to this feature again, when speaking of the ruins of Gui-y-baa, near Tlacolula.

From what I have said about the appearance of the ruins, and the care now taken of them, it is evident that few if any objects of antiquity can be found on the surface. Small bits of obsidian are occasionally met with among the buildings, but they are scarce. So is pottery, of which I have seen only ashy-gray fragments. But the walls and rooms, the courts, and even the tops of the walls, are strewn with a profusion of flint chips, as well as large cores. Some of the

latter are cones of 0.15 metre (6 inches) in diameter at the base, and have a vertical axis of the same length. The flint is yellowish brown, veined with green and yellow, and very rarely with red. The colors are bright and beautiful. It seems as if this material had been largely used for implements.

Little statuettes of stone, clay heads, and "amulets" are also dug out from the soil. The last, of which I secured two, represent human bodies, squatting or cross-legged, with a flat, smooth back, and are perforated at the edges, so that a cord might be passed through the holes. One of the two is of white alabaster; the other, of a partly translucent spinach-green stone, answering, of course, to the general term "chalchihuitl." They strikingly reminded me of similar appendages of alabaster, worn in secret by the Queres Indians of New Mexico.

In the corral of D. José María Monterubio, was dug out, at a small depth, the stone plate which is given on Plate XXV. Fig. 5. It measures 0.51×0.41 metre (20×16 inches), is 0.09 metre ($3\frac{1}{2}$ inches) thick, and the carvings are raised 0.03 metre ($1\frac{1}{5}$ inches). This sculpture is now at the city of Oaxaca.

I was able to make but slight ethnological and linguistic researches. It is almost needless to state that the present organization of the Tzapoteco Indians is upon the modern system, and that communal tenure of lands is abolished. Still, a vestige of the latter is left. If a person dies without children, his real estate reverts to the pueblo for distribution. I did not find this custom among the Nahuatl of Cholula.

The great reputation of the ruins of Lyó-Baa is due in part to the supposition that, in respect to their construction and

size, they stand quite alone in the region about Oaxaca. But I was very soon informed that the immediate vicinity of the village contained many aboriginal remains, although they are not as well preserved. My attention was particularly called to the "Fuerte," a high rock standing about 4 kilometres ($2\frac{1}{2}$ miles) west or west-northwest of the place; and it was stated that the "citadel of Mitla," with long stone parapets, was still to be seen on its summit. Again, about the same distance in an opposite direction, the hacienda of Xagá was said to contain subterranean chambers. I accordingly went to both places, visiting the former on the 24th, the latter on the 25th of June. The ruins at Xagá being less considerable, I will treat of them first.

The hacienda lies towards the end of the basin, and the road to it is almost level; and there is more fertile soil lying alongside of it than in the western portion. It was evidently, with the south, the "garden spot" of the valley. About 500 metres ($\frac{1}{3}$ of a mile) beyond the most eastern houses, I saw, in a field to the north of the road, low mounds of stones, indicating terraces. Their disposition is shown in Plate XXVI. Fig. 1. The height nowhere exceeds 1 metre (3 feet); *a* distinctly shows a level platform; the heaps *b* and *c* are merely mounds of broken stones; *d*, an almost obliterated knoll. The whole forms a rectangle with four disconnected wings, strikingly recalling, in shape and size, the largest clusters of Lyó-Baa. Half-way between Mitla and Xagá, in a field sloping down to the road from the south, is visible a concavity surrounded by low embankments, with very low vestiges of adobe walls. (See Plate XXVI. Fig. 5.) The whole recalls the usual rectangle enclosing a court, and the walls even suggest two connected houses, as at F III. Much pottery, gray and red, was found scattered about both places; also flint chips.

No traces of buildings or terraces are visible on the gentle swell which is now completely occupied by the edifices of the hacienda of Xagá.¹ But beneath the principal houses a gallery in the shape of a cross has been found, a ground plan and section of which are contained in Plate XXVI. Figs. 2 and 3. By comparing it with the basement of C I., the analogy, if not identity, of plan becomes striking. But these so-called underground chambers are not subterranean, as their floor, at the western entrance, is at the level of the centre of the court. It is therefore a true basement, as at Mitla. But while the walls at Mitla are composed of mosaic panels, at Xagá plates of carved stones (Plate XXVI. Fig. 4), containing the two ornaments represented, decorate the inner faces on their upper half. The lower half is made of stones striped gray and white, like wainscoting. The ground of the carvings is Indian red; the ornaments are raised, and have the natural color of the stone. In 1879 excavations were made in the centre of the cross; but only earth was found. Fourteen years ago part of the inner facing on the southern gallery was opened, and it is said skeletons were met with; but no chambers were revealed, and the rest of the mass appeared to be solid throughout.

I could not ascertain that any traditions remain of the former existence of houses on the basement of Xagá. Neither could I obtain any information from land titles. Still, it is more than likely that a superstructure once stood on it. The hacienda formerly belonged to the Dominican monastery of Oaxaca, and the records of that convent, if accessible, must contain information about it, as well as about Mitla in gen-

¹ The word "Xagá" was interpreted to me as "el rincón de los pastos," the edge, or limit, or corner, of the pastures. I give all these definitions as I received them, without vouching for their absolute correctness. I had no time to become acquainted with Tzapoteco.

eral. Similar "casemated" terraces are met with in the neighborhood, at various places, showing that the basement at Lyó-Baa is not an exceptional feature, but, on the contrary, quite common in aboriginal architecture there.

The "Fuerte," called in the Tzapotecan idiom "Jio," that is, height or eminence,¹ has been explored and described by Captain Dupaix. It is a bare and almost treeless rock, about 150 metres (500 feet) high, which rises from the west and northwest in almost perpendicular crags, while on the north the ascent, though difficult, is possible; on the east and south there is a gradual slope. But there is very little soil, even on those declivities, and what vegetation exists is low and scrubby. The top resembles an irregular foot-print, slightly convex, and rising generally to the north-northwest. Its greatest length is about 350 metres (1160 feet), its greatest width about 150 metres (500 feet); but I give these figures only as approximations obtained by pacing off the distance. The surface is partly covered by thorny shrubs, sometimes difficult to traverse. The annexed plan (Plate ~~XXII~~ ^{XXIII}, Fig. 6) is therefore not perfectly reliable, except for the dimensions of the buildings. This top plateau is surrounded by a strong wall of dry stone, piled up apparently without mortar, and built all around above the precipice, except on the western side, where inaccessible places are left unprotected, and short slopes are made perpendicular by walling up from beneath (Plate XXVI, Fig. 9). The height of the wall, as well as its width, varies; but it appears most considerable on the southeast, where, as will be observed, it is also double, with something like salients and re-entering angles. The outer wall is lower than the

¹ From "Jia," high. Dupaix has also given a map of the "Fuerte," which is in vol. iv. Plates XL. and XLI. of Kingsborough. It varies from mine, of course, though not in very essential particulars.

inner; both are 3 metres ($10\frac{1}{4}$ feet) high, and 2.5 metres (9 ft. 7 in.) wide at the top (Fig. 8). As seen on ascending, this double wall presents a very striking and formidable appearance. The entrance through the outer circumvallation is effected by an opening 3.4 metres (11 feet) wide; thence the path turns to the west about 75 metres (250 feet) between the two lines of defence to a similar opening, through which the top platform is reached. This arrangement is thoroughly Indian, and was found by Cortés to exist in the great wall of Tlaxcala, and in the circumvallations of Quauhquechollan.¹

The top supports the buildings G I., G II., and G V., all on platforms, and the ruined mounds G III., G IV., and G VI.; traces of structures are also seen at G VII. Red and gray pottery, flint chips, and some little obsidian, are scattered about; and besides, I found many broken grinding-slabs, *metlatl*, of the concave variety already described.² These lay mostly about the building G I., on the mound G III., and at G VII., which speaks strongly in favor of the supposition that the houses were dwellings.

The building G I. is a rectangle of adobe, whose walls have an average width of 1.05 metres (41 inches), the bricks measuring $0.33 \times 0.15 \times 0.05$ metre ($13 \times 6 \times 2$ inches) each. The adobe reaches only to a height of 2.02 metres (6 ft. 7 in.); above, it is capped by stone. The western wall has the doorways from south to north respectively 3.06, 2.08, and 2.09 metres (9 ft. 9 in., 6 ft. 8 in., and 6 ft. 9 in.) wide. I could not discover any lintels or posts. The building is divided transversely into two rooms of unequal size, and there may be at *a* a door in the partition wall, also an outer door at *b*, but both are problematical. It will be observed that the propor-

¹ Compare *Carta Segunda*, pp. 15, 50. Also, *Art of War and Mode of Warfare*, etc., pp. 143, 144.

² See *antea*, p. 97.

tions of width to length are as 1 to 2, and that the outer wall rests on a foundation of adobe, projecting 0.36 metre (14 inches), and covered with the usual white floor. Beneath it the terrace extends 0.49 metre (20 inches) still farther to the east, made as usual of broken stones.

Seventeen metres (55 feet) southwest of G I. is the low stone terrace G II., nearly square, the northern third of which is taken up by two narrow adobe houses, joined longitudinally, communicating by the door in the partition, the northern wall closed, and the southern half obliterated. This group appears very similar to the one on the south side of the Rio Mitla, and the proportion of width to length in the rooms is 1 to 8. The southern portions of the terrace are bare.

The building G V., constructed on the brink of the precipice, shows three rooms, apparently unconnected, with adobe walls. The northwestern one is 13.4×3.05 metres (43 ft. 7 in. \times 10 ft. 5 in.), the two others each 6×3.6 metres ($19\frac{1}{2} \times 11\frac{3}{4}$ feet).

The mounds are only ruined heaps of broken stones and earth, and none of them suggested to me the idea of a mound of worship, but rather of elevated platforms. While there is much in the architecture of Jio that resembles Lyó-Baa, there are also discrepancies. The total absence of large stone lintels may be accounted for, perhaps, by the difficulty of carrying such weights to the great height, whereas adobe is easily transportable. The roofs are all gone; but since we know that they used timber for such purposes, it is possible that lintels and posts in this case were also of wood.¹

Traversing the entire length of the plateau, we reach a third egress, from which a steep winding path descends to the foot of the bluff on the west side, a fertile level field, called "Llano del Fuerte," plain of the fort. Judging from the

¹ Pomar, *Relacion de Tezcoco*, MS., quoted *antea*, p. 127.

objects found there, as stated to me, this area was the former garden plot of the people who inhabited the cliff. Water also is near at hand. The height of Jio, therefore, recalled to my mind forcibly the old pueblo of Aqiu, or Pecos, in New Mexico, which I described in the first volume of the papers of the Archæological Institute.¹

Common belief ascribes to Jio the *rôle* of a "citadel" or place of refuge for the population of Lyó-Baa, and, as usual, supposes a subterranean communication. The latter story is found everywhere about Indian ruins, from New Mexico to Peru. The former is not impossible, though, from the strong defensive character of the houses at Mitla, there was no absolute need for it. The distance separating the two points is considerable, and the space between was certainly unoccupied in former times. Jio appears therefore rather as an independent pueblo, permanently occupied during aboriginal times.

I left Mitla and its kind people reluctantly on the 28th of June, and stopped on the way at Tlacolula. There, reliable authority informed me that the proper name for the site was Gui-y-Baa, village of the grave or burial-place; and that the ancient settlement, now ruined, was situated about 2 kilometres ($1\frac{1}{4}$ miles) northwest of the town, and that it still contained extensive ruins. With two trustworthy guides I started for the site without a moment's delay.

Following up the course of the Rio Tlacolula, we soon reached a very broken country. Rocky and barren hills rise very steeply close to each other, and around and between

¹ Report on the Ruins of the Pueblo of Pecos, Plate I.; also pp. 89, 90. It also suggested to me the imposing Potrero Viejo, on which the former pueblo of Cochiti stood, with the garden plots of its dwellers, hundreds of feet beneath, in the narrow Cañada.

them are little patches of corn. The right bank of the river is level and appears fertile, and on it stand the remains of four very large rectangles, exactly similar in shape and disposition to the terraces of Mitla, with the walls of one house still partly erect. These are as thick, or nearly so, as those of Lyó-Baa, and made, like them, of stones and earth; but they are dismantled, and only scattered blocks, with smooth surfaces and sharp edges, attest the former presence of "facings." The terraces are partly opened, revealing the existence of basements.

Some distance beyond the river a sharp rocky crest sweeps around from the northwest to the south. Its top, and some of the lower crags, show traces of large walls, like those of Jio, but they are detached, and seem to have been made for the protection of special places only. Below these walls, on the northwestern spur and western slope of the crest, extensive ruins cluster together, of which the principal part is given on Plate XXVI. Fig. 10. H I., H II., and H III. stand on the brink of a very steep declivity, at whose bottom is the water cut-off, "toma de aqua," whence the channel runs out that furnishes water to the town of Tlacolula. The Tzapotecos call the place on the river Rutom, "water-gap," and the crest above it, Yah'-zib-Rutom, "hill of the water-gap." The ruins, however, are those of Gui-y-Baa.

The similarity of the ruins to those of Mitla is very apparent, and needs no comment. The walls are dismantled, but at *a* (H IV.) is a large polished block, $2.71 \times 1.36 \times 0.60$ metres (8 ft. 10 in. \times 53 \times 24 inches), strikingly resembling the lintels of Lyó-Baa. The walls are on an average 1.15 metres (45 inches) thick. At H I. and H III. the three doorways are still standing, and the proportion between the width and length of the four rooms is as 1 to 7 on an average. The houses stand on stone esplanades; but although

the courts are deep, I could not, owing to the rubbish, discover any trace of basements.

There are other similar rectangles scattered around, or rather crowded in about the two groups figured. These other remains I had no time to measure; and I was able to survey the rest of the cluster only in a rather superficial manner. Still, this cluster is more than commonly interesting.

H V. and H VI. are rectangles composed of ruined terraces, each of which is about 26 metres (85 feet) long. H VII. is a much disturbed mound of gray adobe. At H VIII. again are two terraces of stone, each 30 and 34 metres (98 and 104 feet) in length, with a small adobe knoll between them. H IX. is a large mound of broken stones, 10 metres (33 feet) high, and now polygonal, if not almost circular, at its base. We recognize with ease features analogous to those of the clusters E and F of *Lyó-Baa*. But there are indications which go much further. Thus, the small heap of adobe at *c*, externally shapeless, has been opened, and reveals a room inside, with an entrance to the east and a stone lintel. At *a*, on the top of H IX., there is a chamber, apparently sunk about 2.5 metres (8 feet) beneath the actual top, 10 metres (33 feet) by 5 metres (16½ feet), and built of adobe bricks, measuring $0.25 \times 0.12 \times 0.05$ metre ($10 \times 5 \times 2$ inches). I cannot be positive whether this chamber (Plate XXVI. Fig. 11) was intended to be entirely beneath the top of the mound or not; but part of it certainly is, and this suggests the possibility of several tiers, or stories, in these elevated truncated pyramids, and a distinction between them and the broad and composite mounds of Cholula, and recalls Papantla, or Xochicalco. Finally, at *b*, on mound H VII., the steps are visible, represented in Fig. 12. While the stones composing it are smoothed and fitted together, and the work is therefore better executed than are the rude stairs of the great mound of

Cholula, it is interesting to note that in both cases the stones are coated with the same white concrete. All that I found of this graded ascent is given on the plate.

Many antiquities have been found at Gui-y-Baa; stone statues have been exhumed; grinding-slabs and pins were picked up on the surface. The fragments of pottery are identical with those at Mitla. But the interior of the ruins is not easy to penetrate, on account of the dangerous thorns bristling in the thickets which overgrow the courts.

With my superficial examination of the ruins near Tlacolula I closed my work and my stay in that valley, returning to the city of Oaxaca the same evening. An extensive field of investigations still lay before me, but I lacked strength to undertake more. However, the temptation to at least visit the ruins of Monte-Alban, which crown the northern summits of the Espinazo, above the city to the west, was too great to resist, and I therefore toiled up with an Indian on the 2d of July. Wading through the shallow Rio Atoyac, I passed the little pueblos of San Juan and San Martin, beyond which begins the ascent of the rocky, treeless slopes, whose vegetation consists exclusively of low shrubs and weeds. On foot, the crest is reached in about an hour, and we find it to consist of an irregular triangle, open to the south, in which direction a deep barranca empties into the valley. The slopes, however steep, show in places very fertile black loam, which is now carefully cultivated in patches, almost like terraces, between which the rock protrudes in ledges. The top is mostly barren on the west side, the crest is narrow, and runs out into two points. Each of these points is crowned by ruined mounds of broken stones, apparently walled up, between which are traces of old foundations; but those of the centre are modern, and belong to the former Rancho Viejo.

A wider ridge connects this western portion with the eastern, which is slightly depressed, and has upon it architectural remains (Plate XXVI. Fig. 13). Among them is a rectangle, composed of embankments of broken stones and earth around a depressed court. The average width of these embankments is 5 metres (16 feet), and this court measures 17×15.5 metres (56×51 feet). At *f* is the broken lintel shown in Fig. 14, and in front of it stand, planted upright, two door-caps. By comparing measurements, the similarity of both lintel and caps to those of Lyó-Baa becomes evident. Much rude stonework protrudes on one side of this rectangle, and although I cannot decide how much of it may be *in situ*, and how much has been put where it is by crumbling and slides, it struck me that the blocks are much larger than those at Mitla.

I have endeavored to map down the northern, or rather north-northeastern, half of the great eastern side of the triangle of Monte-Alban. Its direction, as far as mapped, is north-northeast to south-southwest; beyond it the crest bends around in a curve to the eastward, and finally terminates in an abrupt point, not unlike a peak, on account of a mound or system of mounds crowning its top. The plan is not exact, and is intended to give only an approximate idea. It rained nearly all the time; the soil, wherever it was not stony, was a deep black mud, and most of the mounds are so thickly overgrown with trees and thorny shrubs, including cactuses, that they can only be ascended by the aid of the "machete," and vigorous cutting.

This northern half forms a rectangular depressed basin, now converted into a field, about 275 metres (900 feet) from north-northeast to south-southwest, and 120 metres (300 feet) from west-northwest to east-southeast. In the centre are two mounds, completely overgrown and hardly accessible. Still, enough can be seen to show that they were originally artifi-

cial, and are made of broken stones and earth. It is probable that the larger one is in fact two distinct knolls, each one nearly round, like the smaller; but now they form a single mass of foliage, with a depression in the middle. On the west of this depressed field a bulwark or parapet of stonework extends for the whole length, protecting it on the side of the barranca. Three rectangular mounds, *e*, *e*, *e*, surmount this embankment at irregular intervals, and these, as well as the embankment itself, bear traces of foundations which look like those of houses. On the opposite side the ground is also slightly higher than the field; it is not tilled, and supports a system of stone mounds of considerable size, recalling *F* at Mitla, and the similar group at Tlacolula. These mounds show hardly any trace of buildings. The whole row lines the brink of the eastern declivity, which there is steep, and interrupted by cultivable terraces. On this side the mounds present a terraced appearance, as if built in stages; but while I feel convinced of this, the possibility of these steps being the result of decay is not to be overlooked.

The field which forms the northeastern angle of the ridge lies below the raised platform *abcd*, which adjoins it on the west, and which completely encloses the central depression to the northwest. This platform measures 75×94 metres (246×308 feet; the slope *ab* is short and gradual; *cd*, deep and almost vertical, crowned by a wall of broken stones, 1.70 metres (about $5\frac{1}{2}$ feet) thick, and broken down in many places; and *bd* appears to be walled up from about 3 metres (10 feet) below to the top. The platform dominates the northern spurs of the Espinazo, a lower series of ridges and crests, with deeply sunken vales and numberless cultivated terraces bearing traces of aboriginal mounds. Beyond it, and in the west, extends the valley of Cuilapa, with the former range of the Mixteco.

On the northwestern corner of this platform rises a terrace, in which several excavations have been made, revealing, however, only a mass of broken stones and earth. On it are stone foundations showing two walls, one inside of the other at a distance of 1.2 metres (47 inches), the outer being visible for a length of 6.8×10.2 metres (22×33 feet). Their width is 1.25 metres (49 inches). The mound B, overgrown on the sides, is 11 metres (36 feet) long, and bears on its top a rectangular structure, of which there is but a trace left. It measures $7 \times 8\frac{1}{2}$ metres ($23 \times 27\frac{1}{2}$ feet). A tunnel has been driven through this mound, revealing a core of earth or clay, surrounded by stones and earth. Whether this core is natural or not, I am unable to say.

On the opposite side (south-southwest) of the middle area begins a grassy level, in which is a sunken field measuring 76×67 metres (249×220 feet). It is flanked by heavily wooded mounds, one of which shows a completely ruined stairway on its northern slopes, presenting now the appearance only of a mass of broken stones. Beyond it, as already stated, the ridge bends to the eastward, crowned at intervals by mounds and terraces, and terminating in a sharp peak, also bearing ruins.

It appears from this that most of the structures of Monte-Alban occupy the sharp crests and summits of the northern termination of the Espinazo.¹ On the slopes there seem to be very few remains. But these slopes, and the lower levels in general, consist frequently of a very fertile black loam; and it seems as if many of these patches had been formerly cultivated, as they still are, in the manner which Burgoa speaks of as the Mixteco custom of tilling the slopes in

¹ For maps of Monte-Alban, I refer to Bancroft, *Native Races*, vol. iv. p. 378; García, in Appendix to Murguía, *Estadística*, etc., p. 270. The French Commission has also, I believe, published something about it.

narrow bands or terraces, "like steps supported by stones."¹ This author distinctly uses the term "camellones," or garden plots.

Everything at Monte-Alban bears the character of works made for defence, and produces the impression that it was a pueblo built on the highest, and therefore most secure place, where three valleys might be watched at the same time, — Cuilapa, Etla, and as far as Santa María del Tule towards Tlacolula. Owing to the peculiar fertility of the soil, the place could be permanently occupied by a considerable Indian population, and that part of it at least delineated on the map looks very much like embankments supporting houses, and surrounding and protecting interior gardens. I have not been able, as yet, to find any reference to Monte-Alban in the older authors, and it is not even certain whether the Tzapotecos or the Mixtecos held it at the time of the Conquest. I therefore confine myself to the notice here given, and thoroughly agree with the opinion of M. Charnay, that Monte-Alban is "one of the most precious remains" of antiquity in the State of Oaxaca.

While there are, at first sight, considerable differences between Monte-Alban and the various ruins of the valley to Tlacolula, many analogous, if not identical, features also present themselves. Thus, the walls are of broken stones and earth only, and in some cases are laid almost dry. Again, we find the high mound of stone, and, what is chiefly interesting, the lintel made of one huge piece of rock, and the correspondingly heavy caps surmounting the door-pillars. It remains a question yet to be investigated, how far the seeming differences may possibly be the result of local causes alone.

Positions naturally well suited for defence, and rendered

¹ *Geográfica Descripción*, etc., vol. i. cap. xxiii. fol. 128, 129.

still stronger artificially, are frequent in the State of Oaxaca. It would even seem as if what might be termed "military positions" had been originally selected for settlement. But the question here arises whether these fortifications were separate from the permanent village, or whether they always surrounded and protected it. We have distinct traces on this continent of two classes of defensive works; namely, fortified pueblos, and places of refuge, strong by nature and artificially strengthened besides, situated within convenient reach of defenceless settlements. I am not competent to decide to which class each of the three places visited — Jio, Gui-y-Baa, and Monte-Alban — belongs. In regard to the second one, I must here state a singular feature. The arched crest or ridge on whose slope the pueblo is built is deeply rent and cleft; but all these fissures are walled up, as also such spaces on the summit as would be accessible by scaling. All these defensive works are higher than the houses. I have also been assured that the summit of the ridge is not built over, and that the only trace of man's work there is a large cistern or pond. The walls, therefore, while they do not afford much shelter to the pueblo, were certainly not constructed to protect a settlement higher up. They look much rather like defences around a place of refuge, to which the population of Gui-y-Baa might resort if hard pressed in their strong houses, carrying with them food ample for a temporary stay; or perhaps food was stored there in advance, while the pond or cistern would always insure an abundant supply of water.

This cursory examination of aboriginal remains in the valley of Tlacolula as far as Xagá has, I believe, revealed one singular fact. It is the existence, not of large villages, but of small groups of large houses, irregularly and promiscuously scattered. Wherever the group or cluster comprises a large

number of buildings, as at Lyó-Baa and Gui-y-Baa, mounds of worship are added to them. Jio has no clear trace of any; neither has Xagá, nor the clusters between it and Mitla. It is easy to see that the remarkable buildings at Mitla do not represent an exceptional feature, but are a type of architecture common to the whole valley; only they are in a better state of preservation. Their ornamentation is very striking, and highly creditable to a people possessing such limited mechanical contrivances. It also served the practical purpose of making the walls weather-proof, and perhaps also siege-proof. The mosaic-work seems to have been introduced, not merely from a purely decorative motive, but on account of its being an easier method of construction than plating long fronts with massive slabs.

The question as to the object for which the houses of Lyó-Baa at Mitla were originally built, has always been a source of lively conjecture. We have already seen that they are by no means exceptional. The equally large buildings of Gui-y-Baa were, as concurrent tradition states, the dwellings of the people. Grinding-slabs have been found there in numbers, as well as in the houses upon Jio, while at Mitla such remains have long since disappeared.

The earliest mention of Mitla known to me is from the pen of Motolinía, who writes that, when Fray Martin de Valencia went to Tehuantepec (about 1533) with some companions, "they passed through a pueblo which is called Mictlan, signifying hell in this language, where they found some edifices more worth seeing than in any other parts of New Spain. Among them was a temple of the demon, and dwelling of its servants (*ministros*), very sightly, particularly one hall made of something like lattice-work. The fabric was of stone, with many figures and shapes; it had many doorways, each one of

three great stones, two at the sides and one on the top, all very thick and wide. In these quarters there was another hall containing round pillars, each one of a single piece, and so thick that two men could barely embrace one of them ; their height might be five fathoms. Fray Martin said that on this coast people would be found handsomer and of greater ability than those of New Spain.”¹ This statement has been copied since, with slight alterations, by the Franciscans Mendieta² and Torquemada.³

We easily recognize in the above description the cluster B at Mitla, with the Hall of Columns. It cannot escape our notice, furthermore, that this cluster appears to be exceptional, not only on account of the pillars, which the greater width of the apartments rendered necessary to support the roof, but mostly by reason of its northern annex, B I. It almost involuntarily suggests the idea of a public building, containing both halls for public gatherings and quarters for certain officers. In this respect it fully corresponds to the idea of the Tecpan, or official house, among the Nahuatl. This would give us, for Lyó-Baa, three types of buildings, — the mound of worship, the official house, and the common dwelling, — corresponding to the Nahuatl Teo-calli, Tecpan, and Calli. At Gui-y-Baa we have the first and last kind clearly defined, and, if size were any criterion, we might seek for the Tecpan about H III. or H IV. on Plate XXVI.

The confused and diffuse tales of Burgoa, who visited Mitla about 1644, have made of Lyó-Baa a sanctuary, a residence exclusively of priests, and an official burial-place.⁴ That some of the buildings were made for purposes of worship is very evident ; but we see also that each mound has in connection with

¹ *Historia*, etc., trat. iii. cap. v. p. 170.

² *Hist. Ecclesiástica Indiana*, lib. iv. cap. x. pp. 395, 396.

³ *Monarchia*, etc., lib. iii. cap. xxix. p. 312.

⁴ *Geogr. Descripción*, vol. ii. cap. liii. fol. 258-261.

it structures that doubtlessly served the purpose of dwellings, and the same can be seen at Gui-y-Baa. There is no need, therefore, of looking for priestly abodes among the other edifices. In regard to interments, none have as yet been found in any of the excavations, and unless the basements formerly contained the bodies of the dead, of which I have met with no tradition, there appears to me very slight prospect of finding any. In case, however, the floors, when opened, should disclose human bones, it would simply still further confirm the suggestion of their having been dwellings, provided Herrera is reliably informed.¹

From the shape and size of the single apartments, it can easily be seen that house life among the Tzapoteco Indians was, in aboriginal times, different from what it is now. The long and narrow halls were not fit for daily abodes, and seem only to have been used as shelters at night and during bad weather, or as retreats for women and children in case of attack. As in New Mexico and at Tezcucó, the sexes slept in separate rooms;² so that every cluster or rectangle of houses could accommodate a large number. The cooking as well as most of the other work was done outside, and the stores were kept either in the basements or in one of the wings. Here we find again, therefore, the division into three distinct sections, characteristic of as many branches of daily life; — the dormitory (equivalent to the Teopantzintli, or Sala, of the Nahuatl, Ma-ítsha-ayünash of the Mije); the court, used as kitchen (Tezcalli of the Nahuatl, and the Mije Ma-útz-mai); and the storeroom (Concalli, or Zash, of the latter idiom).

We are told by Herrera that the Tzapoteco were organized

¹ *Historia General*, etc., dec. iii. lib. iii. cap. xv. p. 101.

² Pomar, *Relacion de Tezcoco*, MS. Herrera, *Hist. General*, dec. iii. lib. iii. cap. xii. p. 97: "Adonde los Caciques tenian sus palacios, con apartamientos para las mugeres."

by kins, localized in *barrios* or quarters,¹ and we know that they had, and still have in part, communal land-tenure. The large buildings, therefore, in the valley of Tlacolula, imply a communal organization and a clustering for shelter by sexes, differing from the communal life of the Indian in other regions only by the exigencies of another climate and of varying natural resources.

AD. F. BANDELIER.

HIGHLAND, ILL., February 9, 1882.

¹ *Hist. General*, etc., dec. iii. lib. iii. cap. xiii. p. 100: "Sacaban para la guerra la gente por Barrios, i la guiaban los capitanes." This is of the Mixtecos, but the same author distinctly states (p. 100): "Lo sobredicho es quanto al Reino Misteco; queda aoro lo que toca á la Provincia de los Çapotecos, i Cuioatecos, i otros, cuias costumbres casi son las mismas en general, i en todo lo demas,"

